



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

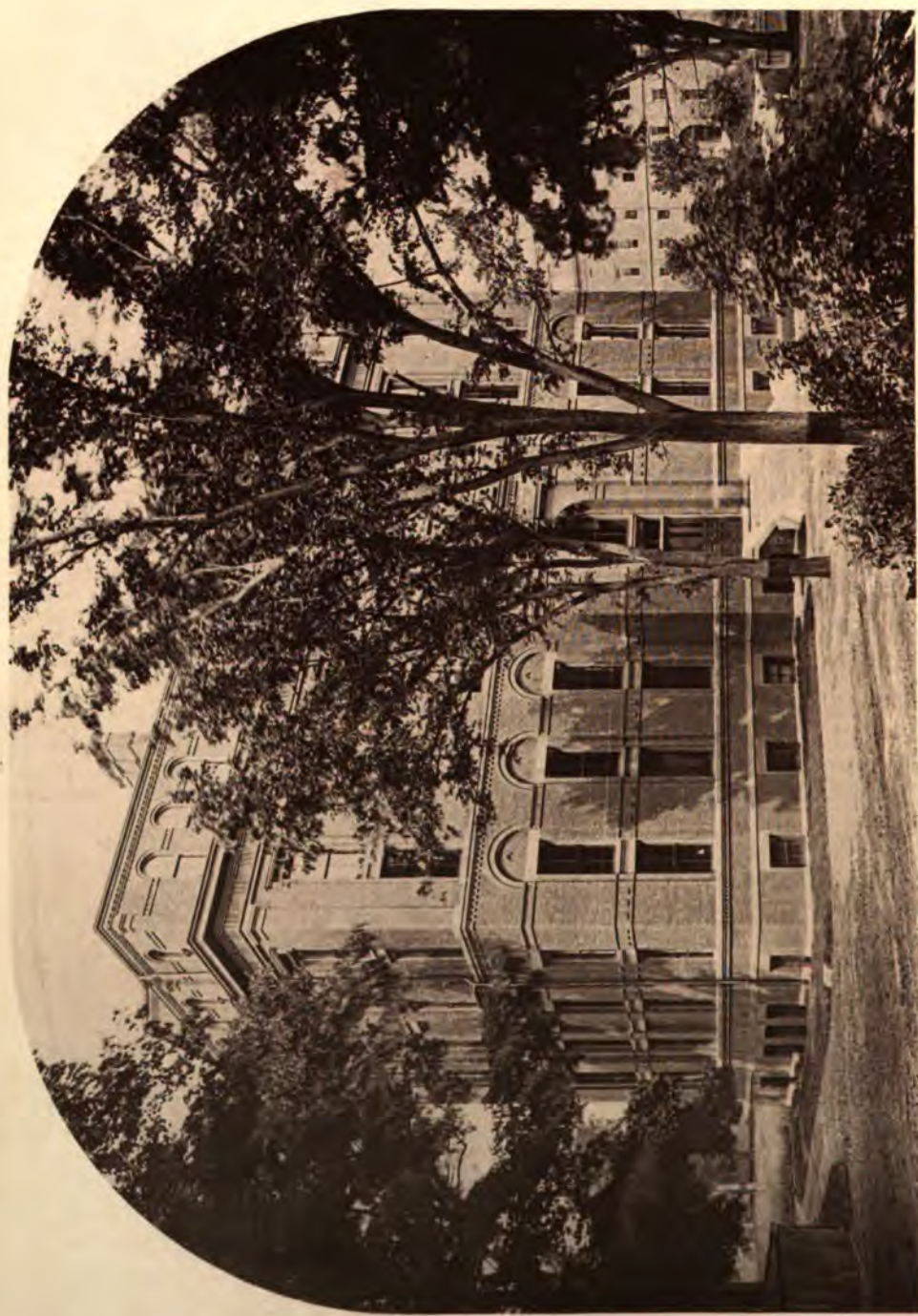
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Per. 17583 d. $\frac{5r}{2}$



Heliotype Printing Co.

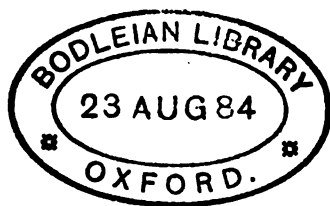
PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY

Boston.

REPORTS
OF THE
PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY
IN CONNECTION WITH
HARVARD UNIVERSITY.

VOLUME II.
1876-79.

CAMBRIDGE:
PRINTED BY ORDER OF THE BOARD OF TRUSTEES.
1880.



PRINTED AT THE SALEM PRESS,
SALEM, MASS.

PREFATORY NOTE.

THIS Second Volume of the Annual Reports of the PEABODY MUSEUM comprises the four Reports covering the operations of the Museum for the past four years.

During this period the collections have been removed from their temporary quarters, in Boylston Hall, to the building erected for the purposes of the Museum on Divinity Avenue. A view of it is given in the frontispiece to this volume, and a short account may be found on page 185. The portion of the Museum now erected and occupied consists of one-fifth only, or the end section, of the contemplated building, which, when completed, will form one of the two great wings of the structure planned by the late Professor Louis Agassiz. The opposite wing is used to accommodate the

several departments of the Museum of Comparative Zoölogy, and to this purpose the main building will also be devoted.

The six large rooms, with their four galleries, of the building now occupied by the **PEABODY MUSEUM**, are being cased and arranged as fast as the means available and the character of the work will allow.

One room with the gallery has already been arranged, and is now open to the public, free, under proper restrictions. During the present year it is expected that two other rooms with their galleries will also be opened to the public, and next year it is probable that the general arrangement will be so far completed as to permit the exhibition of all the collections, so far as this may be possible in the limited accommodations of this first section of the Building.

CONTENTS OF VOL. II.

TENTH REPORT. Presented January 17, 1877. Published June 21, 1877.

	PAGE.
LETTER TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE,	
TRANSMITTING THE REPORT	3
LIST OF TRUSTEES AND OFFICERS	4
ABSTRACT FROM THE RECORDS	5
REPORT OF THE CURATOR	7
ADDITIONS TO THE MUSEUM FOR THE YEAR	13
ADDITIONS TO THE LIBRARY FOR THE YEAR	20
REPORT ON THE CRANIA RECEIVED DURING THE YEAR, BY	
LUCIEN CARR, <i>Assistant Curator</i>	27
REPORT ON THE DISCOVERY OF SUPPOSED PALEOLITHIC IMPLE-	
MENTS FROM THE GLACIAL DRIFT, IN THE VALLEY OF THE	
DELAWARE RIVER, NEAR TRENTON, NEW JERSEY, BY	
CHARLES C. ABBOTT. <i>With three illustrations</i>	30
REPORT ON THE AGE OF THE DELAWARE GRAVEL BEDS CON-	
TAINING CHIPPED PEBBLES, BY N. S. SHALER	44
REPORT ON EXPLORATION OF ASH CAVE IN HOCKING COUNTY,	
OHIO, BY E. B. ANDREWS	48
REPORT OF EXPLORATIONS OF MOUNDS IN SOUTHEASTERN OHIO,	
BY E. B. ANDREWS. <i>With ten illustrations</i>	51
REPORT ON THE EXPLORATION OF A MOUND IN LEE COUNTY,	
VIRGINIA, BY LUCIEN CARR. <i>With six illustrations.</i>	75
ON THE ART OF WAR AND MODE OF WARFARE OF THE AN-	
CIENT MEXICANS, BY AD. F. BANDELIER	95
REPORT OF THE TREASURER	162

ELEVENTH REPORT. Presented Feb. 18, 1878. Published Sept. 9, 1878.

LIST OF TRUSTEES AND OFFICERS	173
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	175
ABSTRACT FROM THE RECORDS	176
REMARKS OF THE HON. ROBERT C. WINTHROP, PRESIDENT OF THE BOARD OF TRUSTEES, AT THE ANNUAL MEETING, FEB. 18, 1878	177
REPORT OF THE BUILDING COMMITTEE. <i>With seven illustrations</i>	185
REPORT OF THE CURATOR	191
LIST OF ADDITIONS TO THE MUSEUM FOR THE YEAR	207
LIST OF ADDITIONS TO THE LIBRARY FOR THE YEAR	217
MEASUREMENTS OF CRANIA RECEIVED DURING THE YEAR	221
SECOND REPORT ON THE PALÆOLITHIC IMPLEMENTS FROM THE GLACIAL DRIFT IN THE VALLEY OF THE DELAWARE RIVER, NEAR TRENTON, NEW JERSEY, BY CHARLES C. ABBOTT. <i>With four illustrations</i>	225
✓ THE METHODS OF MANUFACTURE OF SEVERAL ARTICLES BY THE FORMER INDIANS OF SOUTHERN CALIFORNIA, BY PAUL SCHUMACHER. <i>With seven illustrations</i>	258
✓ CAVE DWELLINGS IN UTAH, BY EDWARD PALMER. <i>With one illustration</i>	269
✓ THE MANUFACTURE OF SOAPSTONE POTS BY THE INDIANS OF NEW ENGLAND, BY F. W. PUTNAM. <i>With one illustration</i>	278
✓ NOTES ON A COLLECTION FROM THE ANCIENT CEMETERY AT THE BAY OF CHACOTA, PERU, BY JOHN H. BLAKE. <i>With thirty illustrations</i>	277
✓ ARCHÆOLOGICAL EXPLORATIONS IN TENNESSEE, BY F. W. PUTNAM. <i>With a plan and fifty-five illustrations</i>	305
✓ OBSERVATIONS ON THE CRANIA FROM THE STONE GRAVES IN TENNESSEE, BY LUCIEN CARR	361
✓ ON THE DISTRIBUTION AND TENURE OF LAND, AND THE CUS- TOMS WITH RESPECT TO INHERITANCE, AMONG THE ANCIENT MEXICANS, BY AD. F. BANDELIER	385
REPORT OF THE TREASURER	449

TWELFTH REPORT. Presented Jan. 15, 1879. Published March, 1880.

LIST OF TRUSTEES AND OFFICERS	462
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	464
ABSTRACT FROM THE RECORDS	465
REPORT OF THE CURATOR. <i>With three illustrations</i>	466
ADDITIONS TO THE MUSEUM FOR THE YEAR	482
ADDITIONS TO THE LIBRARY FOR THE YEAR	492
MEASUREMENTS OF CRANIA FROM CALIFORNIA, BY LUCIEN CARR	497 ✓
FLINT CHIPS, BY CHARLES C. ABBOTT. <i>With three illustrations</i>	506 ✓
THE METHODS OF MANUFACTURING POTTERY AND BASKETS AMONG THE INDIANS OF SOUTHERN CALIFORNIA, BY PAUL SCHUMACHER. <i>With two illustrations</i>	521 ✓
ABORIGINAL SOAPSTONE QUARRIES IN THE DISTRICT OF COLUM- BIA, BY ELMER R. REYNOLDS	526 ✕
ON THE RUINS OF A STONE PUEBLO ON THE ANIMAS RIVER IN NEW MEXICO; WITH A GROUND PLAN, BY LEWIS H. MOR- GAN. <i>With four illustrations</i>	586 ✓
ON THE SOCIAL ORGANIZATION AND MODE OF GOVERNMENT OF THE ANCIENT MEXICANS, BY AD. F. BANDELIER	557 .
REPORT OF THE TREASURER	700

THIRTEENTH REPORT. Presented Feb. 6, 1880. Published Mar., 1880.

LIST OF TRUSTEES AND OFFICERS	712
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	713
ABSTRACT FROM THE RECORDS	714
REPORT OF THE CURATOR	715
ADDITIONS TO THE MUSEUM FOR THE YEAR	732
ADDITIONS TO THE LIBRARY FOR THE YEAR	744
REPORT OF THE TREASURER	752
CASH ACCOUNT OF THE CURATOR	754
INDEX TO THE VOLUME	757

TENTH ANNUAL REPORT
OF THE TRUSTEES
OF THE
PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY,

PRESENTED TO THE PRESIDENT AND FELLOWS OF
HARVARD COLLEGE, JUNE, 1877.

VOL. II. No. 1.

CAMBRIDGE.
PRINTED BY ORDER OF THE TRUSTEES.
1877.



TENTH ANNUAL REPORT.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

THE Trustees of the Peabody Museum of American Archæology and Ethnology herewith respectfully communicate to the President and Fellows of Harvard College, as their Tenth Annual Report, the Reports of their Curator and Treasurer for the year ending in January last.

ROBERT C. WINTHROP,
CHARLES FRANCIS ADAMS,
STEPHEN SALISBURY,
ASA GRAY,
HENRY WHEATLAND,
THOMAS T. BOUVÉ,
THEODORE LYMAN.

CAMBRIDGE,
JUNE 21, 1877.

PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY
IN CONNECTION WITH
HARVARD UNIVERSITY.
FOUNDED BY GEORGE PEABODY, OCTOBER 8, 1866.

TRUSTEES.

- ROBERT C. WINTHROP, Boston, 1866.
CHARLES FRANCIS ADAMS, Quincy, 1866.
FRANCIS PEABODY, Salem, 1866; *deceased*, 1867.
STEPHEN SALISBURY, Worcester, 1866.
ASA GRAY, Cambridge, 1866.
JEFFRIES WYMAN, Cambridge, 1866; *deceased*, 1874.
GEORGE PEABODY RUSSELL, Salem, 1866; *resigned*, 1876.
HENRY WHEATLAND, Salem, 1867. Successor to Francis Peabody, as
President of the Essex Institute.
THOMAS T. BOUVÉ, Boston, 1874. Successor to Jeffries Wyman, as
President of the Boston Society of Natural History.
THEODORE LYMAN, Brookline, 1876. Successor to George Peabody Rus-
sell, by election.

OFFICERS.

- ROBERT C. WINTHROP, *Chairman*, 1866.
STEPHEN SALISBURY, *Treasurer*, 1866.
GEORGE PEABODY RUSSELL, *Secretary*, 1866-1873.
HENRY WHEATLAND, *Secretary*, 1873.
JEFFRIES WYMAN, *Curator of the Museum*, 1866-74.
ASA GRAY, *Curator of the Museum, pro tempore*, 1874-1875.
FREDERICK W. PUTNAM, *Curator of the Museum*, 1875.
LUCIEN CARR, *Assistant Curator of the Museum*, 1877.

ABSTRACT FROM THE RECORDS.

At a Meeting held on Wednesday, April 17, 1876, Prof. Gray submitted plans for the erection of a section of the proposed building for the Museum, dimensions 40 by 75 feet within the walls.

A committee, consisting of Messrs. Lyman and Gray, was appointed to request the Corporation of Harvard College to grant land of sufficient dimensions to erect thereupon the proposed building for the Peabody Museum of American Archæology and Ethnology, according to the plans submitted.

This committee was also requested to provide plans and estimates of the end section, and also the second section if it should be deemed advisable, and to report at a future meeting of the Trustees.

Meeting on Wednesday, May 31, 1876.

Mr. Lyman, of the committee on the building, mentioned that he had met a Committee of the Corporation of the College, and that they would grant the land for the building, whereupon it was ordered that the committee be authorized to make the necessary arrangements, and to receive from the corporation a written legal document.

The following copy of a vote of the Corporation has since been received :

*At a Meeting of the President and Fellows of Harvard College in Boston,
March 12th, 1877.*

At the request of the Trustees of the Peabody Museum of American Archæology and Ethnology, and in accordance with the recommendations of the Committee appointed by this board on May 1st, 1876, it was

Voted, That while granting for the use of the Peabody Museum of American Archæology and Ethnology the location of its building now in part nearly finished, it is hereby agreed that no new building shall ever be erected, without the written consent of the Trustees of the Peabody Museum, or their successors, upon the land lying southerly of said Museum building, within a line parallel to the southerly wall of said building, and distant seventy-six feet from the nearest part of the cut granite foundation thereof above ground, as the same now stands.

A true copy of Record.

Attest, E. W. HOOPER, *Secretary*.

Plans for the proposed building were submitted by the committee, and after the adoption of some slight modifications it was

Voted, That the Building Committee be authorized to approve, and the Treasurer thereupon to sign, contracts for the erection of the proposed section of the Museum in accordance with the plans submitted.

Annual Meeting, Wednesday, January 17, 1877.

Mr. Lyman presented a verbal report on the building. The architect submitted a report containing estimates for the cases, furnaces and other incidentals. Referred to a committee consisting of Messrs. Lyman, Gray and Bouvé.

The reports of the Treasurer and Curator were read and adopted.

Mr. Lucien Carr was appointed Assistant Curator in accordance with the recommendation of the Curator.

HENRY WHEATLAND, *Secretary*.

REPORT OF THE CURATOR.

To the Trustees of the Peabody Museum of American Archæology and Ethnology:—

GENTLEMEN:—Since my last report, dated January 19, 1876, the centennial year of American Independence has closed and with it the decennial of this Museum.

In relation to the first of these anniversaries, the Museum was called upon to furnish numerous articles supplementary to the National Exhibit of Archæology and Ethnology made at Philadelphia under the direction of the Smithsonian Institution, and also to add bound volumes of its reports to those of the National and State Boards of Education. Thus while its name did not appear in the list of special contributors to the great exhibition, nevertheless it did its part in showing to the world the achievements of American research.

In connection with its own anniversary, it appears appropriate to consider, for a moment, what has been accomplished during the ten years which have passed since, with such insight in regard to the wants of American science, Mr. Peabody made the foundation of what is still the only museum in America specially devoted to anthropology.

During these ten years not only has the fund, entrusted to your care for the performance of the duties which you accepted, been so wisely invested and faithfully guarded that it has increased in amount to a sum over one-third larger than when placed in your charge, but at the same time a large and valuable museum has been formed, and, by an expenditure which will probably leave intact the fund originally devoted to the purpose, you will, before another year has passed, be in possession of a fire-proof and commodious building in which to arrange the archæological and ethnological treasures which have been accumulated under your direction.

In conformity with Mr. Peabody's expressed wish, much has been done, during these ten years, toward the accumulation of material for the proper understanding of the condition of the early inhabitants of America, and their relation to those of other parts of the world. For this purpose special explorations in America have been made with marked success, and large and valuable collections from abroad have been secured for the purpose of comparison.

In this brief sketch of the results obtained in ten years it must not be forgotten how much is due to one of the original members of the Board of Trustees (Prof. Jeffries Wyman), who, by his labors, added to the value of the collections secured for the Museum, while they, in turn, enabled him to make his important contributions to American ethnology.

During the past year the work in the Museum has been performed by Mr. Carr and myself, and we have, principally by Mr. Carr's nearly uninterrupted labor, succeeded in properly caring for and cataloguing all the additions made during the year.

The great value of Mr. Carr's voluntary labor, and the fact that he can give nearly all of his time to the Museum while the detail work now required is more than I could accomplish unassisted, lead me to request that he be appointed Assistant Curator of the Museum, in which capacity he has acted during the year.

For a special account of the additions to the Museum and Library since January last, I refer to the reports prepared by Mr. Carr. From these it will be seen that sixteen hundred and sixty-five entries have been made in the catalogue during the year, and that seventy-eight volumes and ninety-seven pamphlets have been added to the library. It will also be noticed that, notwithstanding the fact that no large purchases have been made, the total number of specimens received (amounting to between eight and ten thousand) is in excess of previous years, and that their value is unusually great for the purposes of the Museum.

In order that craniologists may in a general way know the characteristics of the crania received by the Museum, the principal measurements of each skull have been taken by Mr. Carr and are annexed to this report.

Mr. Agassiz has again contributed to the Peruvian Collection by the addition of an important series of articles of pottery from Chimbote, a locality farther north on the coast of Peru than heretofore represented in the Museum. An ancient bronze from the

same locality, also presented by Mr. Agassiz, is of special interest. It is also worthy of note, when taken in connection with the discoveries of Schliemann at Hissarlik, that the collection of jars from Peru contains several with the representation of the owl's face, which is also represented on specimens of Missouri pottery.

A small collection of articles made of gold and also of gold and copper alloy, secured by purchase through Professor Baird, is of special interest, and is the only illustration in the Museum of the arts of the ancient nation of New Grenada.

To the Trustees of the Peabody Academy of Science in Salem, the Museum is particularly indebted for a large collection of stone implements, articles from the shellheaps, a few crania and many other specimens, which they allowed me to take from the Museum under their charge, on the liberal principle of placing this valuable material where it would be of the greatest use to science. By this act of the Trustees of the Academy, the Museum receives a large accession to its Abbott collection of stone implements from New Jersey, and with this addition it will now be possible to arrange the New Jersey collection in such a manner as to make it a standard for comparison with other parts of the country. The articles from the various shellheaps in Maine and Massachusetts, received from the Academy, will also enable a better exhibit to be made of the shellheaps of New England, in contrast with those of Florida which are so well represented by the labors of Professor Wyman. To myself, this act on the part of the Trustees of the Academy is specially gratifying, as it again places under my charge many articles that I had either personally collected or paid special attention to when connected with that institution.

To Surgeon General Barnes, U. S. A., in charge of the Army Medical Museum, and to Assistant Surgeon George A. Otis, U. S. A., Curator of the Museum, the Peabody Museum has been particularly indebted during the year, not only for important assistance in scientific work, and for several small collections of interest, but especially for the finely executed and accurate life-size portrait of my predecessor, the late Professor Jeffries Wyman.

Though very little has yet been done toward the formation of such a working library as it is hoped eventually to secure, still a number of important additions have been made by purchase during the year, and several gifts and exchanges have been received. To the President of the Board of Trustees the library is specially in-

debted for a copy of the rare and costly work, by Mr. Schoolcraft, on the Indian Tribes of North America, and for the continuation of several of the foreign serial publications.

As the officers of the College Library took possession of the cases in the former Anatomical Museum, for the storage of books during the alterations in the library building, the arrangement of specimens as proposed in the last report could not be accomplished, and the only additional cases occupied during the year are a few in the gallery where the crania were already arranged. It has thus been necessary to pack and store a large part of the collections received during the year in the best manner possible with the present accommodations, and prepare for the removal of the Museum to the new building during the summer.

The explorations conducted under the direction of the Museum during the past year have proved of considerable importance and have furnished valuable material.

Dr. Edward Palmer forwarded a very interesting collection obtained from mounds in Southern Utah, formed over the ancient dwellings of a nation evidently closely allied to the present Pueblo Indians, and also many articles obtained from the Mojave tribe and from Southern California. During the visit of Dr. Palmer to Cambridge, in September last, arrangements were made with him to take the field again entirely in the interests of the Museum, and at the close of the year he started for Utah with a carefully planned route and full instructions in relation to special work to be done for the Museum. The appropriation under which he is now acting will provide the means for a few months to come, and it is believed that he will be so successful as to warrant the continuance of his services in the field if the necessary funds can be spared.

Prof. E. B. Andrews has continued his explorations of mounds in Ohio, acting under the appropriations of last year, and has been very successful in obtaining important facts in relation to the formation and contents of the mounds. He has also partially examined a very interesting cave, or rock shelter, from which a human skeleton and a number of articles were obtained. The collections made by Prof. Andrews have been received at the Museum and recorded in the catalogue during the past two years.

I present, as part of this report, the accounts furnished by Prof. Andrews of his investigations.

Mr. Lucien Carr, acting under an appropriation granted at the last annual meeting, and in connection with the field party of the Kentucky Geological Survey, stationed during the past season at Cumberland Gap, opened a mound in Lee County, Virginia. By Mr. Carr's special report on this mound, hereto annexed, it will be seen that the mound probably belongs to a different class of structures from those described in detail in Prof. Andrews' report.

The conflicting testimony of the mounds yet requires to be carefully considered, and many more of these ancient tumuli must be examined before their story can be told; but there is much which suggests that in these mound structures we have to deal with widely distinct periods of time, if not with several nations. Thus while recent investigations and historical evidence show that mounds were formed and used by some comparatively recent Indian tribes, history and tradition are silent in relation to the older earthworks, and investigation of the works themselves shows how careful we must be in drawing deductions. Just as the tumuli of Europe exhibit marked differences, indicating distinct periods, so do those of America, and the periods when cremation and inhumation were severally practised must be studied here in connection with the earthworks and tumuli. From the facts now before us it seems proper, until further deductions can be drawn, to regard the great earthworks of the Ohio valley as a phase of development corresponding, but not identical, with that which is shown by the existing Pueblo Indians; while individual mounds and many of the earthworks in distinct portions of the country are to be attributed to more or less nomadic tribes, of which all the great families furnish examples.

Probably the most important result attained in American archæology during the year is that secured by Dr. C. C. Abbott of Trenton, New Jersey, to whom a small appropriation was granted to enable him to continue his researches.

As will be seen by a perusal of his special report, hereto annexed, Dr. Abbott has probably obtained data which show that man existed on our Atlantic coast during the time of, if not prior to, the formation of the great gravel deposit which extends towards the coast from the Delaware River near Trenton, and believed to have been formed by glacial action. From a visit to the locality, with Dr. Abbott, I see no reason to doubt the general

conclusion he has reached in regard to the existence of man in glacial times on the Atlantic coast of North America.

I may also add that since his report was presented, Dr. Abbott has forwarded four other stone implements¹ taken from various depths in the gravel, thus adding to the weight of the conclusions he has drawn.

At the last annual meeting the proposition to publish special memoirs relating to American Archæology and Ethnology was favorably considered, though decided action was not taken. I therefore take the liberty of again calling your attention to this subject by offering for your consideration a paper, by Mr. Ad. F. Bandelier, entitled the "Art of War and mode of Warfare of the Ancient Mexicans." This paper is the result of very careful study of the old Spanish and Mexican authors, and materially changes the views heretofore generally held in regard to the stage of development reached by the nation which so bravely held out against its Spanish conquerors. This paper is endorsed by Mr. Lewis H. Morgan, and is in every way worthy of publication by the Museum.

With this statement I beg your early consideration of the important subject of the publication of special papers either in connection with the Annual Reports or under a distinct title.

Respectfully submitted,

F. W. PUTNAM,

Curator of the Museum.

CAMBRIDGE, MASS., Jan. 17th, 1877.

¹ Three of these implements have been carefully engraved and the figures are inserted in Dr. Abbott's report. Other specimens from the gravel have been also received since the annual meeting.

Prof. N. S. Shaler has visited the locality since the above report was read, and at my request has furnished a short report on the Trenton gravel deposit, which I have inserted after Dr. Abbott's account.

REPORT

ON THE ADDITIONS TO THE MUSEUM AND LIBRARY FOR
THE YEAR 1876.

BY LUCIEN CARR, *Assistant Curator.*

Additions to the Museum.

9409—9511. A variety of ornaments and articles such as are now in use among the Pah Ute Indians, illustrating their manners and customs. Among these, are musical instruments; implements of horn used in chip-ping arrowheads and straightening the arrow itself; baskets and the tools used in making them; fire sticks, clay pipe, beads of bone, various games and gambling devices, toys, charms, sandals, domestic utensils, corn planter, etc. Also a collection of knives, arrowheads and other implements of stone; bone awls, shell ornaments, stones for grinding corn, charcoal and burnt corncobs, earthen pots and numerous fragments of pottery, plain and ornamented, some in colors, from a Mound near Santa Clara in South Utah.—Explorations of Dr. EDWARD PALMER conducted for the Museum.

9512. Photograph of a carved stone found in White-water Creek, Colorado Desert.—Presented by Dr. C. C. PARRY, of Davenport, Iowa.

9513—9514. Modern Venetian glass rod, used in making polychrome beads; rough garnet beads.—Presented by Dr. C. C. ABBOTT, of Trenton, New Jersey.

9515—9516. Spearpoint and knife of stone, from Sudbury, Mass.—Collected and presented by Mr. REUBEN SMITH, through Mr. T. G. CARY, of Cambridge, Mass.

9517. Photograph of the Dighton Rock inscription.—Presented by Capt. A. M. HARRISON, U. S. Coast Survey.

9518—9522. Photographs of ancient vases from Cyprus, Peru, and Tehuantepec.—Presented by the METROPOLITAN MUSEUM OF ART, New York.

9523—9538. Sixteen photographs of Chippewa and Sioux Indians, males and females.—Presented by Mr. D. A. ROBERTSON, of St. Paul, Minnesota.

9539—9570. Stone arrowheads, knives, drills, celts, gouges and axe from Newburyport; stone axe from North Berwick, Maine; celt and sinker of stone from Byfield, Mass.; sinkers and hammerstones from Rowley, Mass.; stone gouge and pestle from Groveland, Mass.; stone axe from Ohio.—By PURCHASE.

9571—9587. Large oval stones, carved and resembling horse-collars in shape; axes of stone, knobs and handles of pottery, and stone implements with human face carved on them, from Porto Rico.—Collected by Mr. GEORGE LATIMER and presented by the SMITHSONIAN INSTITUTION, Washington, D. C.

9588. Comb used by a Modoc Indian (Captain Jack), with hair attached.—Collected by Sergeant THOMAS EISENBEIS, U. S. A., and presented by Dr. W. J. HOFFMAN, of Reading, Pennsylvania.

9589—9593. Charred wood, reeds, grass, earth and plaited straw from a mound in Madison Co., Mississippi.—Collected by Prof. B. H. Whitfield of Clinton, Mississippi, and presented by Prof. ASA GRAY of Cambridge.

9594. A large earthen pot from Wiarton, Canada.—By PURCHASE.

9595—9599. Four scrapers from Trenton, New Jersey, the same that were figured in Nature for Feb. 3d, 1876; also a stone implement from the same place.—Presented by Dr. C. C. ABBOTT, of Trenton, New Jersey.

9600—9622. Casts of fifteen grotesque faces from Mexico; rattle made of the shell of a box turtle, *Cistudo*, by Choctaw Indians; clay pipe and small vase from Alabama; pottery from Canstadt.—Presented by the BOSTON SOCIETY OF NATURAL HISTORY.

9623—9649. Rattle used by the Assiniboin Indians, collected by Ass't Surgeon J. P. KIMBALL, U. S. A.; iron pointed arrows of the Cheyenne Indians, collected by Ass't Surgeon S. M. HORTON, U. S. A.; spoon, butcher knife, hammer and scissors, all of iron, and a glass ball showing marks of fire, from Indian graves near Fort Randall, Dakota Territory, collected by Ass't Surgeon G. P. HACKENBERG, U. S. A.; "Kouse" bread made by the Nez Percés Indians, collected by Acting Ass't Surg. EDWARD STORROR, U. S. A.; Apache quiver and arrows, iron pointed, and a hammerstone or clubhead from Santa Cruz massacre ground, collected by Ass't Surg. H. R. TILTON, U. S. A.; pottery from cemetery near Fort Wayne, Ind., collected by Surgeon B. J. D. IRWIN, U. S. A.; cupping horn and gun flint by Ass't Surg. A. J. COMFORT, U. S. A.; horn spoons, bone scraper for dressing skins, and a whistle also of bone, modern beads and ornaments, and stones for "fixing" arrowheads, all from a grave near the old Ponka Agency, collected by Ass't Surg. GEO. N. HOPKINS, U. S. A.; piece of a rafter from Pecos Church, near Santa Fé, built by the Pueblo Indians, collected by Surgeon D. C. PETERS, U. S. A.—Presented by the ARMY MEDICAL MUSEUM, Washington, D. C.

9650—9651. Photographs of Indian rock sculptures near Brattleboro and Bellows Falls.—Presented by Dr. J. B. S. JACKSON, of Boston, Mass.

9652. Portion of a rush mat from a cliff house on the Rio Mancos, Colorado.—Collected and presented by Mr. W. H. HOLMES, of Washington, D. C.

9653—9697. Drills, scrapers, knives, arrowheads, spearpoints, and other implements of stone from Cumberland County, Tennessee. In all a thousand specimens.—By PURCHASE.

9698—9704. Perforated stones, celts, perforated stone cylinder, and stone ornaments with carved human figure, from Puntas Arenas, Costa Rica.—Presented by the MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge.

9705—9727. Human bones, burnt earth and clay, fragment of steatite pot, and arrowheads from mounds in Hocking County, Ohio; burnt clay and charcoal, burnt animal and human bones from mounds in Athens County, Ohio; fragments of pottery, arrowheads and spearpoints found on the surface, Hocking County, Ohio.—From Explorations of Prof. E. B. ANDREWS, conducted for the Museum.

9728. Arrow, probably from the Sandwich Islands.—Collected by the late HORACE MANN, jr., and presented by Mrs. HORACE MANN, of Cambridge.

9729. Model of native boat from the Fiji Islands.—Presented by Dr. GEO. A. PERKINS, of Salem, Mass.

9730—9863. The collection from the Ely mound, Lee County, Virginia, described in the special report; stone celt sharpened at both ends, stone ball with many shallow borings, found on the surface, Lee County, Virginia; arrowheads, spearpoints, drills and scrapers of flint, piece of sandstone perforated and worked in squares, and three small pipes, one each of sandstone, jasper and steatite, from the surface near Cumberland Gap, Tennessee; blunt pin of coal from Turner's Mound, and fragment of logs used in covering the central grave, from the same mound, Bell County, Ky.; bead made of cannel coal, shell pin, human and animal bones from caves in Lee County, Virginia, and Claiborne County, Tennessee; pipe of steatite carved like the head of some fanciful animal, the resemblance to which can only be seen when the pipe is turned up-side-down, from Bean's Station, Tennessee; celts and grooved axes of stone and a pipe of steatite, carved in the shape of a tomahawk, from the surface near Russellville, Tennessee, collected by Mr. HUGH ROGAN; also a pipe of steatite ornamented with rings and slightly raised circles, and a perforated shell of *Busycon perversum*, from a mound near the same place collected by Mr. ROGAN; shell and coal beads, human remains, spearpoint, arrowhead, and dagger of flint, from the Haunted Cave, Edmonson County, Kentucky; flint chips, from a Rock-house under the Indian Fort on Ivy Creek Bluff, Barren County, Ky.; arrowheads, spearpoints, knives, scrapers, and a characteristic general assortment of flint implements from western Kentucky.—Explorations of Mr. LUCIEN CARR, conducted for the Museum.

9864—9881. Fused copper from Indian grave near Burksville, Kentucky, collected by Mr. C. L. S. MATTHEWS; rude flint axe from western Kentucky; pipe of steatite, from near Pineville, Kentucky, collected by Mr. CHARLES B. JOHNSON, of Gibson's Station, Va.; shell pin and beads, sharpening stone, arrowheads and knife of flint, piece of steatite pot and fragments of rude coarse pottery from Turner's Mound, Bell County, Ky.—Collected by Mr. LUCIEN CARR and deposited by the KENTUCKY GEOLOGICAL SURVEY.

9882—10002. A large and valuable collection of ancient pottery from Chimbote, Peru, comprising single and double vases and jars of different sizes and shapes; some plain, others highly ornamented and with human, bird and animal forms moulded on them; cups, bowls and ladles, plain

and ornamented; water jars, some of black pottery and among them a whistling jar; spindles, knitting needles, thread of three colors, a small brush; and an interesting group cast in bronze, representing a woman bending over a recumbent figure, whilst in the back ground, a serpent is coiled with its head appearing just above a child swinging in a cradle or a hammock stretched between two trees.—Presented by Mr. ALEXANDER AGASSIZ, of Cambridge.

10003—10049. A collection of spearpoints, discoidal stones, axes, celts, pipes and stone implements, principally from the Culleesgee Valley, North Carolina. Some of these specimens are worthy of special attention: A spearpoint of rose-colored flint is of beautiful finish and measures nine inches and two-tenths in length and four inches in breadth. A pipe of steatite is carved to represent the body of a duck, and is seven and three-tenths inches in length. The bowl is an inch and a half broad at the top, two and a half deep, and tapers to the bottom. The stem is five and a half inches in length, and seems to have been originally bored out, though an inch and a half of its length has been subsequently dug out and much enlarged. It is probable that the bowl of the pipe was made in the same manner. The marks of the tool used in enlarging the hole are very plain, and instead of being perpendicular to the bowl of the pipe as they would have been if produced by a succession of hammer-like blows, are spiral in form, somewhat like the groove in a rifle barrel, and seem to indicate that they had been made by a continuous pressure exerted on the cutting tool, whilst at the same time a slight twist is given to the wrist, the pipe all the while being firmly held in one position by the left hand. There is also a piece of steatite carved to represent a duck, over twelve inches in length by four in height. The carving is very well done and the specimen is perfect except the bill of the duck which has been broken off. It was probably intended for a pipe and was unfinished, as were two other specimens which are blocked out and only partially bored.—By PURCHASE.

10050—10079. Pestles, scrapers, drills, "chungke stone," knives, arrowheads, spearpoints, and many other stone implements of forms usually found south of the Ohio, from Cumberland County, Tennessee.

In this collection there is a pipe from Overton County, Tenn., carved in the shape of a duck. The sides, or wings, and neck of the pipe are ornamented with a number of regularly drawn lines. The bowl is an oval at the top, an inch and a half one way by an inch the other. It is two inches deep, and is much drawn in towards the bottom. It shows marks of the tool with which it was dug out. The stem was evidently bored out. It is about three and a half inches in length and tapers from the mouth-piece to where it joins the bowl. The pipe measures a little over six and a half inches in length, and weighs seventeen and one-half ounces. There is also a tube of steatite polished all around except on one narrow strip that extends its whole length. It is thirteen and two-tenths inches in length by two and three-tenths in diameter. The boring was done from each end, and was subsequently enlarged by digging. The hole or

perforation is an oval, measuring at one end six-tenths of an inch in the longest diameter, and at the other an inch and two-tenths in diameter. The borings from the two ends do not meet exactly and consequently there is a bend in the perforation. Around the centre of the tube on the outside is a raised circle, polished on all sides except one, seven-tenths of an inch in width.—By **PURCHASE**.

10080. Photograph of stone implement from Newburyport.—Presented by Mr. **ALFRED OSGOOD**, of Newburyport, Mass.

10081. Photograph of East Indian Idol—Presented by Mr. **FRANK HILD**, Murphysboro, Illinois.

10082—10139. A collection of articles in use among the Mohave Indians, consisting of ornaments, pipes, tools, baskets, articles of food, domestic utensils, various games, devices for gambling, wearing apparel, water jars, bowls, ladles, toys, etc.—From the Explorations of Dr. **E. PALMER** made for the Museum.

10140—10141. Photographs of pottery from mounds in south-east Missouri.—Presented by Dr. **GEORGE J. ENGELMANN**, of St. Louis.

10142—10143. Stone gouge and spearpoint from North Andover Mass.—Collected and presented by Mr. **AARON T. THOMPSON**, of North Andover.

10144. Broken stone celt from Winter Island, Salem, Mass.—Presented by Mr. **D. A. MAHONEY**, of Salem.

10145—10211. A collection of stone implements from the surface near Trenton, New Jersey, consisting of axes, celts, scrapers, knives, pestles, sinkers, slickstone, spearpoints, arrowheads and drills; fragments of pottery from Trenton; a stone knife from Charenton, France; and a pipe made of catlinite presented by Dr. **C. C. ABBOTT**. Included in this collection is a series of rude implements found in the gravel of the river bluff, near Trenton, also specimens showing the natural fracture of the rocks found in the same deposit.—Collected and presented by Dr. **ABBOTT** and the **CURATOR** of the Museum.

10212—10223. Rush mats, birch-bark canoe, stone pipe and Kinnikinnik, corn pounder, war club, sack and mat of cedar, and bark rope from the Ojibwa Indians of Lake Superior.—Purchased for the Museum by Mr. **HENRY GILLMAN**, of Detroit.

10224—10228. Hammerstones from Isle Royale, Lake Superior.—Presented by Mr. **ALEXANDER AGASSIZ**, of Cambridge.

10229—10957. This collection, consisting of 730 distinct entries and covering several thousand specimens, is composed in part of bones of animals, birds and fishes, charcoal and burnt earth, bone implements, shells, axes, gouges, celts, sinkers, knives, arrowheads and other implements of stone, and numerous fragments of pottery from the shellheaps of Lynn, Salem, Marblehead, Ipswich, Beverly, Newburyport, Plum Island, Concord and Wellfleet, Mass., Goose Island in Casco Bay, Damariscotta, Maine, and Montreal, Canada, collected at various times by Messrs. **PUTNAM**, **COOKE**, **MORSE**, **SEARS**, **OSGOOD** and others; human remains, flint arrowheads, and animal teeth from mounds near Dubuque, Iowa, and

REPORT PEABODY MUSEUM, II. 2.

Dunleith, Ill., collected by Messrs. PUTNAM, and C. COOKE of Salem; human cranium and other human bones, animal bones, Unlo shells, and fragments of pottery, from the fortification and the mounds inside the fortification at Merom, Indiana, collected by Mr. PUTNAM and party; human crania and remains from a grave in Saugus, from Beesom's pasture and D. R. Bickford's Lawn, Marblehead; from the corner of Essex and Cambridge streets, Salem, and from under the Pine Grove Shellheap, Marblehead, collected by Mr. COOKE and other members of the Essex Institute; stone axes, celts, gouges, hammerstones, sinkers, scrapers, pestles, knives, arrowheads and spearpoints of different patterns, but all belonging to the distinctively New England type of stone implements, collected by various persons, from Saugus, Salem, Lynn, Marblehead, Beverly, Ipswich, Chelsea, Peabody, Newburyport, Concord, Springfield, Cohasset, North Andover and Stony Brook Station, Massachusetts; a pestle from Moultonboro, N. H.; mullers, drills, celts, scrapers, sinkers, knives, arrowheads and other implements and ornaments of stone, a bone awl, fragments of rude pottery, and a stone partly perforated, with the core still remaining, showing that the boring had been done with a hollow instrument, from various places in New York; mullers, grooved axes, hammerstones, knives, arrowheads, etc., from different localities in Ohio; a fragment of cloth from a mound in Butler County, Ohio, described by Dr. J. W. FOSTER; stone implements of the usual Ohio Valley patterns, including two large oval spearpoints of flint from Indiana, collected by Dr. JOHN SLOAN and Dr. A. S. PACKARD, jr.; stone implements from Boone County, Kentucky; arrowheads, and two large oval flint implements found with 600 others near Beardstown, Illinois, four feet below the surface, by Dr. J. F. SNYDER, of Virginia, Cass County, Illinois; a stone pot from Lambertville, New Jersey, collected by Dr. C. C. ABBOTT, of Trenton; stone celts from mounds in Louisiana, collected by the Rev. E. R. L. BEADLE; stone celt from Mississippi; two casts of jars from mounds in south-east Missouri; photographs of stone idols, crania, and ornaments of shell and copper from Tennessee, the originals collected by Dr. JOSEPH JONES; drill and arrowhead of stone from Wyoming Territory, collected by Mr. S. W. GARMAN, of Cambridge; stone celts from Port Credit, Canada, collected by Rev. C. J. S. BETHUNE; stone celt from Hayti, and another from the United States of Columbia; leather sandals from East Coast of Africa; "patapatoo" from New Zealand; war clubs elaborately carved, and a four-pronged spear from the Fiji Islands; paddles, a shark's tooth sword, bows and arrows with wooden and bone points, from the Pacific Islands; a harpoon point of iron and bone (Eskimo?) from West Peabody, Mass; and an iron tomahawk, much eaten by rust, from the site of the old Meeting House, Salem, Mass. With this collection was received a large and very valuable series of stone implements, from the surface, chiefly of jasper and slate, characteristic of the stone age of New Jersey, and also some of the rude forms peculiar to the river gravel. These were gathered at different times by Dr. C. C. ABBOTT. The interest and

working value of this series from New Jersey is much increased by the fact that during a brief visit which Dr. Abbott made to Cambridge in November last, he arranged and classified it in accordance with his published accounts of the Stone Age in New Jersey. All the articles here mentioned were presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

10958—10991. Knives, axes, arrowheads, and spearpoints, hammer-stones, slickstones, and pottery, from Trenton, New Jersey. In this collection there is a flint implement, showing unmistakable marks of human workmanship, probably a spearpoint or knife, that was found on the site of the Lutheran Church in Trenton, one mile from the river, and in the gravel six feet from the surface; also a stone implement to which the local name "turtle-back" has been given, which was found in the gravel twenty-two feet deep and three feet in from the face of the river bluff; also a carved pipe of stone found on the site of Nassau Hall, Princeton College, near the supposed grave of Tammany.—From explorations of Dr. C. C. ABBOTT, conducted for the Museum.

10992—10993. Fragments of colored pottery from ancient ruins in Colorado, Utah and Arizona.—Collected and presented by Mr. E. A. BARBER, Chickies, Penn.

10994—10995. Rude specimens, stone flakes and gun flint, from Marble Ridge, North Andover, Mass.—Presented by Mr. A. D. THOMPSON, of North Andover.

10996. A stone pipe, the bowl ornamented with carved lines, from Cumberland Gap, Tenn.—Presented by Mr. E. R. BENTON, of Harvard College.

10997. A pipe stem (?) of slate, elaborately carved open work, from the Northwest Coast.—Presented by Mr. HOLMES HINCKLEY, of Harvard College.

10998—10999. Bulbs of a lily used for food by Indians of Southern California; teeth of deer from mound near St. George, South Utah.—From explorations of Dr. E. PALMER, conducted for the Museum.

11000—11013. Bows and iron-pointed arrows of the Utah Indians; riding whip, coat and trousers, Ogalalla Sioux Indians; model of sledge, Canadian Indians; cordage, model of canoe, sharks' teeth sword and two specimens of kapa or native cloth, one colored, from the Sandwich Islands; a shell headdress from the Fiji Islands.—Presented by Mr. FRANCIS PARKMAN of Brookline.

11014—11039. Ashes and burnt human bones, copper band, a plate of copper perforated and ornamented, a stone tube handsomely polished, from W. Connett's mound near Dover, Athens county, Ohio; human remains, piece of sandstone with markings, animal bones, fragments of pottery, shells of Unios, fern leaves, corn cobs, and seeds of the *Chenopodium album*, from an Ash Cave, Hocking county, Ohio.—From explorations of Prof. E. B. ANDREWS, conducted for the Museum.

11040—11041. Cranium from valley of the French Broad river, above Knoxville, Tenn.; and another from an island in the Tennessee river, eighteen miles below Chattanooga.—By PURCHASE.

11042. Section of Cranium, showing abnormal position of the *foramen magnum*, from Fort Dummer, Vermont.—Presented by Prof. N. S. CRESSY, Amherst, Mass.

11043—11050. Casts of eight Crania, including Australians, a negro, an ancient Peruvian, Indians from the Pampas of Buenos Ayres, and a modern Italian (Alexandre Volta).—Presented by the MUSEO NAZIONALE DI ANTROPOLOGIA E DI ETNOLOGIA IN FIRENZE.

11051. Photograph of a carved human figure in stone from Union County, Ill. Presented by Mr. WM. ANDERSON, of Murphysboro, Ill.

11052—11053.—Photographs of three pipes and of a stationary stone cornmill, in Trenton, New Jersey.—Presented by Dr. C. C. ABBOTT, of Trenton, N. J.

11054. Photograph of stone ornament found in Fruitport, Michigan.—Presented by Mr. W. L. COFFINBERRY, of Grand Rapids, Mich.

11055—11059. Spearpoints and arrowheads of stone from Lebanon County, Pennsylvania.—Presented by Mr. H. L. ELLIG, of Millbach, Penn.

11060—11073. Ornaments of gold and gold alloy from near Bogota. Eight of these are of human shape, two like serpents, and four of different fanciful patterns. One of the serpents was from the bottom of Lake Guatavita, near Bogota.—By PURCHASE.

11074. Two implements of steatite from the graves near Santa Barbara, California. Collected by Mr. BOWERS and presented by Asst. Surg. H. C. YARROW, U. S. A., Washington, D. C.

Additions to the Library.

From the Hon. Robert C. Winthrop. The Stone Period; a paper read at the Southampton Meeting of the Royal Archæological Institute of Great Britain and Ireland, Aug. 5th, 1872; by Edward T. Stevens. Pamphlet, 8vo. pp. 19. Prehistoric Times, as illustrated by Ancient Remains and the Manners and Customs of Modern Savages; by Sir John Lubbock, 8vo. pp. 640. New York, 1872. Some account of the Blackmore Museum, Salisbury, England. The opening meeting, Sept. 5th, 1867; published under the direction of the Wiltshire Archæological and Natural History Society, established in 1853. Pamphlet, 8vo, parts 1 and 2. Deizes and London. History of the Condition and Prospects of the Indian Tribes of the United States, by H. R. Schoolcraft. Illustrated by S. Eastman, U. S. Army, six volumes, 4to. Philadelphia, 1851. Cours graduel et complet de chinois parlé et écrit; par le comte Kleczkowski ancien Chargé d'affaires de France à Pékin, Professeur de chinois à l'Ecole Nationale, &c., one volume, 8vo. Paris, 1876. Notice sur un Mobilier Préhistorique de la Sibérie, communiquée à la Société des sciences naturelles de Neuchatel dans sa séance du 1^{er} Mai, 1873: par E. Desor. Pamphlet 8vo, 11 pp. Neuchatel, 1873. Oscillations des Quatre Grands Glaciers de la Vallée de Chamounix par Venance Payot, naturaliste au Museum de Mont Blanc, etc. Pamphlet 8vo, 7 pp. Lausanne, 1867. Discours d'ouverture par M. le comte Gozzadini, Président du congrès d'Archéologie et

d'Anthropologie Préhistoriques, session de Bologne. Pamph., 8vo, 12 pp. Bologne, 1871. Guide to Northern Archæology by the Royal Society of Northern Antiquaries of Copenhagen; edited for the use of English Readers by the Right Honorable, the Earl of Ellsmere. Pamphlet, 8vo, 128 pp. London, 1848. Le Niagara quinze ans après; par M. Jules Marcou. Extrait du Bulletin de la Société Géologique de France séance du 6 Mars, 1865. Pamphlet, 8vo. Lettre de M. Agassiz, à M. Marcou sur la géologie de la vallée de l' Amazone, avec des remarques de M. Jules Marcou. Extrait du Bulletin de la Société Géologique de France, séance du 3 Décembre, 1866. Pamphlet, 8vo. Distribution Géographique de l'or et de l'argent aux États-Unis et dans les Canadas; par Jules Marcou. Extrait du Bulletin de la Société de Géographie, Novembre, 1867. Pamphlet, 8vo. Une Ascension dans les Montagnes Rocheuses: par J. Marcou, extrait du Bulletin de la Société de Géographie. Mai, 1867. Pamphlet, 8vo. Paris, 1867. Mémoires de la Société des Antiquaires du Nord, Nouvelle Série, 1866-1868, 1873-1874. Matériaux pour l'Histoire primitive et philosophique de l'Homme; par Gabriel de Mortillet, Nos. 1 and 6. Janvier et Juin, 1868.

From the Department of the Interior, Washington, D. C. Geological and Geographical Survey of Colorado and Adjacent Territory for the year 1874, by F. V. Hayden, United States Geologist. Washington, 1876. One volume 8vo, pp. 515. Geological Survey of the Territories, F. V. Hayden, Geologist in charge, Vol. II, Cretaceous Vertebratæ; by E. D. Cope, Washington, 1875. One vol. 4to, pp. 302 with plates. Geology of the Uinta Mountains, with Atlas; by J. W. Powell, Geologist in charge. Washington, 1876. One vol. 4to, pp. 218. Exploration of the Colorado River of the West and its Tributaries, explored in 1869, 70, 71, 72, under the direction of the Smithsonian Institution, by J. W. Powell, Washington, 1875. One vol. 4to, pp. 285. Bulletin of the United States Geological and Geographical Survey of the Territories. Nos. 1, 2 and 4, Vol. II, and Nos. 5 and 6, Second Series. Bulletin of the United States National Museum, No. 1,—Check List of North American Batrachia and Reptilia; by Edward D. Cope. No. 2,—Contributions to the Natural History of Kerguelen Island; by J. H. Kidder, M. D. No. 3,—Contribution to the Natural History of Kerguelen Island; by J. H. Kidder, M. D. No. 5,—Catalogue of the Fishes of the Bermudas; by G. Brown Goode. Mineral Wealth, Climate and Rain-fall and Natural Resources of the Black Hills of Dakota; by Walter P. Jenney, E. M., Geologist in charge.

From the Smithsonian Institution, Washington, D. C. Smithsonian Contributions to Knowledge, vols. XX and XXI, Washington, 1876. Two vols. 4to. Smithsonian Report for 1875, Washington, 1876. One vol. 8vo, pp. 422. The Empire of Brazil at the Universal Exposition of 1876 in Philadelphia, one volume, 8vo, pp. 494. Rio de Janeiro, 1876. Annual Report of the Department of Mines, New South Wales, for the year 1875. Sydney, 1876. One vol. 4to, pp. 167. Mineral Map and General Statistics of New South Wales, Australia. Sydney, 1876. Mines and Mineral Statistics of New South Wales, and Notes on the Geological Collection of

the Department of Mines, compiled by direction of the Hon. John Lucas, M. P., Minister for Mines. Also Remarks on the Sedimentary Formations of N. S. Wales by Rev. W. B. Clarke; and Notes on the Iron and Coal Deposits, Wallerawang, and on the Diamond Fields, by Prof. Liversidge. Sydney, 1876. One vol. 8vo, pp. 252. New South Wales, the Oldest and Richest of the Australian Colonies, by Charles Robinson. Sydney, 1873. Pamphlet, 8vo, 110 pp. New South Wales, its Progress and Resources, by authority of the Commissioners. Sydney, 1876. Pamphlet, 8vo, 31 pp.

From Brig. Gen'l A. A. Humphrey, Chief of Engineers, U. S. Army. United States Geographical Surveys west of 100th Meridian, Lieut. Geo. M. Wheeler, Corps of Engineers U. S. Army, in charge, Washington, 1875. One vol. 4to, pp. 681.

From the Army Medical Museum, Washington, D. C. List of Skeletons and Crania in the section of Comparative Anatomy of the United States Army Medical Museum, for use during the International Exhibition of 1876. Washington, 1876. Pamphlet, 8vo, pp. 52. Check-list of Preparations and Objects in the Section of Human Anatomy of the United States Army Medical Museum, for use during the International Exhibition of 1876, in connection with the representation of the Medical Department, U. S. Army; by George A. Otis, Asst. Surgeon U. S. Army, Curator of the Army Medical Museum. Washington, 1876. Pamphlet, 8vo, pp. 135.

From F. W. Putnam. Explorations and Surveys for a Rail Road Route from the Mississippi River to the Pacific Ocean. Vol. I, Vol XII, parts 1 and 2, Washington, 1860. Three vols. 4to. Annual Message and Accompanying Documents, 1850-1. Washington, 1850. One vol. 8vo. California Message and Correspondence, 31st Congress, 1st session. One vol. 8vo, pp. 976. 1850. Travels in America performed in 1806, for the purpose of exploring the Rivers of the Alleghany, Monongahela, Ohio and Mississippi, and ascertaining the produce and condition of their banks and vicinity; by Thomas Ashe, London, 1808. One vol. 8vo, pp. 366. Routledge's Illustrated Natural History of Man, parts 33 and 34, London. Prehistoric Remains which were found on the site of the city of Cincinnati, Ohio, with a vindication of the "Cincinnati Tablet"; by Robert Clarke, Cincinnati, 1876. Pamphlet, 8vo, pp. 34. Bulletin of the United States Geological and Geographical Survey of the Territories, second series, No. 1. Washington, 1875. Pamphlet, 8vo, pp. 47. Ancient Burial-ground in Swanton, Vermont; by Prof. George H. Perkins, Salem, 1874. Pamphlet, 8vo, 27 pp. Worcester's Unabridged Dictionary. Minutes of the Ohio State Archæological Convention, held in Mansfield, Ohio, Sept. 1st and 2nd, 1875. Columbus, 1875. Pamphlet, 8vo, pp. 42. Indian Net Sinkers and Hammer-stones; by Charles Rau. Pamphlet, 8vo, pp. 8. On the Pottery of the Mound Builders, by J. W. Foster. Pamphlet, 8vo, pp. 10. On Some Modifying Elements affecting the Ethnic Significance of Peculiar Forms of the Human Skull; by Daniel Wilson, Toronto. Pamphlet, 8vo.

From the Author. Mounds at Merom and Hutsonville on the Wabash. Archæological Researches in Kentucky and Indiana in 1874. Description of a stone knife found at Kingston, New Hampshire. Description of a

carved stone representing a Cetacean, found at Seabrook, N. H. Description of an ancient Indian carving found at Ipswich, Mass. Note on the skull of a Mound Bullder from Davenport, Iowa. Notes on Crania found in an Indian grave at Saugus, Mass. Description of Stone knives found in Essex County, Mass. Note on Crania from Mounds, calling attention to a paper by J. W. Foster. Nine pamphlets, 8vo; by F. W. Putnam.

From the Author. On the Remains of Population observed on and near the Eocene Plateau of North Western New Mexico; by E. D. Cope; read before the American Philosophical Society, June 18, 1875. Pamphlet, 8vo.

From the Trustees. Annual Report of the Trustees of the Astor Library of the city of New York, 1876. Pamphlet, 8vo, 74 pp.

From the Society. The Wiltshire Archæological and Natural History Magazine for June, 1875. No. XLIV, Vol. XV.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool during the sixty-fourth session, 1874-75. No. XXIX, 8vo, pp. 385. London and Liverpool, 1875.

From the Academy. Memoirs of the Peabody Academy of Science, Salem, Mass. Vol. 1, No. 4. "The Fresh Water Shell Mounds of the St. John's River, Florida" by Jeffries Wyman. 4to, 94 pp. with plates.

From the Society. Archivio per l'Antropologia e la Etnologia organo della Società Italiana di Antropologia e di Etnologia pubblicato dal Dott. Paolo Mantegazza, Professor ordinario di Antropologia Nel R. Istituto Superiore in Firenze. Sesto volume, Fascicolo. I, II. Firenze, 1876. Pamphlets, 8vo.

From the Society. Boletín de la Sociedad Geografica de Madrid. Tomo. I. Num. 1. Julio, 1876. Madrid, 1876.

From the Society. Sitzungsberichte der Gesellschaft für Geschichte und Alterthumskunde der Ostseeprovinzen Russlands, aus dem Jahre, 1875. Mittheilungen aus dem Gebiete der Geschichte Liv-, Est- und Kurlands, herausgegeben von der Gesellschaft für Geschichte und Alterthumskunde der Ostsee-Provinzen Russlands. Zwölften Bandes Zweites Heft. Pamphlets, 8vo. Riga, 1876.

From the Association. Minutes of the Indiana State Archæological Convention, held at Indianapolis, Sept. 29th and 30th, 1875. Pamphlet, 8vo.

From the Academy. Proceedings of the Davenport Academy of Natural Sciences. Davenport, Iowa, 1876. Volume I. 1867-1876. 8vo, pp. 283 and plates.

From the Museum. Second Catalogue of the Ancient and Modern Works of Art given or loaned to the Trustees of the Museum of Fine Arts, Boston. 1876. Pamphlet, 12mo, pp. 74. Proceedings at the Opening of the Museum of Fine Arts, with the Reports for 1876, a list of Donations, etc. Boston, 1876. Pamphlet, 8vo, pp. 43.

From the Author. Columbus and the Geographers of the North; by the Rev. B. F. DeCosta. Hartford, Conn., 1872. Pamphlet, 4to, pp. 23.

From the Author. Le Valhalla des Sciences, ou La Galerie Commémorative de Blois; par le C^{te} Léopold Hugo. Pamphlet, 8vo. Paris, 1875.

From the Author. De L'Origine des Anciens Peuples du Mexique; par M. Émile Guimet, Lyon, 1875. Pamphlet. Esquisses Scandinaves, Relation du Congrès d'Anthropologie et d'Archéologie préhistorique; par Émile Guimet. One vol., 12mo, 254 pp. Paris.

From the Author. On the Stone Mining Tools from Alderley Edge, Cheshire; by Prof. W. Boyd Dawkins. Pamphlet, 8vo, pp. 5 with plate.

From the Author. The Prehistoric Remains which were found on the site of the City of Cincinnati, Ohio, with a vindication of the "Cincinnati Tablet;" by Robert Clarke. Cincinnati, 1876. Pamphlet, 8vo, 34 pp., with plate.

From the Author. Observations upon the Form of the Occiput in the Various Races of Men. Observations upon the Cranial Forms of the American Aborigines, based upon specimens contained in the collection of the Academy of Natural Sciences of Philadelphia. The Mensuration of the Human Skull. Description of a deformed fragmentary Human Skull, found in an ancient quarry-cave at Jerusalem; with an attempt to determine, by its configuration alone, the ethnical type to which it belongs. 4 pamphlets, 8vo; by J. Altken Meigs, of Philadelphia.

From the Author. Remarks on the Centres of Ancient Civilization in Central America and their geographical distribution. Address read before the American Geographical Society, July 10, 1876. Bulletin of the American Geographical Society, special meeting July 10, 1876, for the reception of Dom Pedro d'Alcantara, Dr. Aug. Peterman, Prof. N. E. Nordenskjöld and Dr. C. H. Berendt. Analytical Alphabet for the Mexican and Central American Languages. Cartilla en Lengua Maya para la Enseñanza de los Niños Indígenas. 3 pamphlets; by C. Hermann Berendt, M. D.

From the Author. Cenni sopra una caverna della Palmaria su resti d'animali e umani dell'età della pietra in essa trovati. Sui Depositi Antropozoici nella caverna dell'isola Palmaria, Ricerche paleontologiche. Ricerche in Grotte dei dintorni della Spezia e in Toscana. Sulle Variazioni della distanza spino-alveolare. 4 Pamphlets, 8vo, by Ettore Regalia. Florence, Italy.

From Mr. Gerhard Gadé, United States Consul, through the Hon. Robert C. Winthrop. The Ancient Vessel found in the Parish of Tune, Norway, translated by Gerhard Gadé.

From the Authors. Memoirs of the Geological Survey of Kentucky, N. S. Shaler, Director. Vol. I, Part 4—On the Prehistoric Remains of Kentucky; by Lucien Carr and N. S. Shaler. Pamphlet, 4to, 31 pp., with 7 plates.

From the Author. Über Altgriechische schädel aus Gräbern der verschwundenen alten stadt Cumä in unter-Italien von Carl Gustav Carus. Pamphlet, 4to, 134 pp.

From the Society. Proceedings of the British and American Archæological Society. Rome. Season 1875-6. Pamphlet, 8vo.

From the Society. The Colonial Intelligencer, the organ of the Aborigines Protection Society. November, 1875.

From the Author. Archæological Frauds; by Charles Whittlesey. Pamphlet, 8vo.

From the Author. An Historical Address, Bi-Centennial and Centennial, delivered at Groton, Mass., July 4, 1876, by Samuel A. Green. Two copies, one each, first and second editions. Pamphlet, 8vo. Groton, 1876.

From the Boston Society of Natural History. Report on the Geological Map of Massachusetts prepared by W. O. Crosby, Assistant in the Laboratory of the Boston Society of Natural History; Prof. Alpheus Hyatt in charge.

From the Author. Vorgeschichtliche Steindenkmäler in Schleswig-Holstein; von Heinrich Handelmann. Drettes Heft. Kiel, 1874. Pamphlet, 4to.

From the Author. Geographical Distribution of Plants; by Charles Pickering, M. D. Salem, 1876. One vol., 4to, pp. 524.

From the Society. Historical Collections of the Massachusetts Historical Society. Vols. I, VI, VII, first series. Vol. III, second series. Vols. III, IV, V, VI, VIII, third series. Vols. II, III, IV, V, VI, VII, VIII, IX, X, fourth series, and Vol. I, fifth series. Also Catalogue of the Library. 2 vols. Total 21 vols., 8vo.

From Prof. E. T. Cox. Geological Survey of Indiana for 1875. Indianapolis, 1876. 1 vol., 8vo, pp. 599.

From D. A. Robertson, of St. Paul, Minnesota. Transactions of the American Geographical Society of New York for 1874. Vol. V, 8vo, pp. 272. The Grasshopper or Rocky Mountain Locust, and its ravages in Minnesota; a special report to the Governor, Hon. C. K. Davis. Pamphlet, 8vo, pp. 48.

From the Academy. Transactions of the Academy of Sciences, St. Louis. No. 3, Vol. III. Pamphlet, 8vo.

From the Society. Festschrift zur Feier des fünfzigjährigen Bestehens Vogtländischen alterthumsforschenden Vereins in Hohenleuben nebst dem 44, 45, u. 46. Jahresbericht und festbericht. Pamphlet, two numbers, 8vo.

From the Museum. Bericht des Museum für Völkerkunde in Leipzig. 1873. Pamphlet, 8vo. Parts 1, 2, and 3.

From F. W. Putnam. A framed steel engraving of George Peabody, the founder of the Peabody Museum.

From the Army Medical Museum, Washington. An enlarged photographic portrait, finished in crayon, of Jeffries Wyman, the former Curator of the Peabody Museum.

By Purchase. Ancient Stone Implements of Great Britain; by John Evans. 1 vol., 8vo, pp. 640. New York, 1872. Flint Chips; by Edward T. Stevens. 1 vol., 8vo, pp. 593. London, 1870. Prehistoric Times; by Sir John Lubbock. 1 vol., 8vo, 640 pp. London, 1872. Cave Hunting, Researches on the Evidence of Caves respecting the Early Inhabitants of Europe; by W. Boyd Dawkins. London, 1874. 1 vol., 8vo, pp. 445. Grave Mounds and their Contents; by Llewellynn Jewitt. London, 1870. 1 vol., 8vo, pp. 306. Næula Cornublæ, a descriptive essay, illustrative of the Sepulchres and Funereal Customs of the Early Inhabitants of the County of Cornwall; by William Copeland Borlase. London, 1872. 1

vol., 8vo, pp. 287. *Assyrian Discoveries*; by George Smith. New York, 1875. 1 vol., 8vo, pp. 461. *The Recent Origin of Man as illustrated by Geology and the Modern Science of Prehistoric Archæology*; by James C. Southall. Philadelphia, 1875. 8vo, pp. 606. *Prehistoric Races of the United States*; by J. W. Foster. Chicago and London, 1873. 1 vol., 8vo, pp. 415. *Antiquities of the Southern Indians*; by Chas. C. Jones, jr. New York, 1873. 1 vol., 8vo, pp. 532. *Rude Stone Monuments in all countries; their age and uses*; by James Fergusson. London, 1872. pp. 559. *Two Years in Peru, with Exploration of its Antiquities*; by Thomas J. Hutchinson. London, 1873. 2 vols., 8vo. *Man in the Past, Present, and Future; from the German of Dr. L. Büchner, by W. S. Dallas*. London, 1872. 1 vol., 8vo, pp. 363. *The Primitive Inhabitants of Scandinavia*; by Sven Nilsson, edited and with an introduction by Sir John Lubbock. London, 1868. 1 vol., 8vo, pp. 272, with plates. *The Races of Mankind, being a popular Description of the Characteristics, Manners, and Customs of the Principal Varieties of the Human Family*; by Robert Brown. London, Paris, and New York. Four volumes in two. 4to. *Memoirs read before the Anthropological Society of London. 1863-1869*. 8 vols., 8vo. London. *Natural History of man*; by James Cowles Pritchard. London, 1848. 1 vol., 8vo, pp. 677. *Descriptive Ethnology*; by J. G. Latham. London, 1859. 2 vols., 8vo. *The Natural History of the Varieties of Man*; by Robert Gordon Latham. London, 1850. 1 vol., 8vo, pp. 574. *Observations on the Aboriginal Monuments of the Mississippi Valley*; by E. G. Squier. New York, 1847. Pamphlet, 8vo, 79 pp. *Catherwood's Views in Central America, Chiapas, and Yucatan*. 1 vol., folio, 24 pp., with map and plates. *La Caverne D'Aknafih, Ile D'Ounga, Alaska*; par Alph. L. Pinart. Paris, 1875. Pamphlet, 4to, 10 pp., with plates. *Kent's Cavern, its testimony to the Antiquity of Man; a lecture delivered in the City Hall, Glasgow, by William Pengelly*. London, 1876. Pamphlet, 12mo, 39 pp.

REPORT

ON THE CRANIA RECEIVED DURING THE YEAR.

BY LUCIEN CARR, *Assistant Curator.*

IN explanation of the subjoined measurements, it may be stated that by length is meant the greatest longitudinal diameter, measured from the glabella to the most prominent part of the occiput; that the breadth signifies the distance between those points of the parietal bones that are widest apart; that the height is taken between the middle of the anterior border of the foramen magnum and the highest point on the inter-parietal suture; that the width of frontal is measured at the narrowest point on the temporal ridge above the external angular processes, and that the internal capacity is obtained by measuring with carefully selected peas, in the manner adopted by the late Prof. Wyman after repeated experiments with other materials. The metric system is used for all the measurements; length, breadth, height and width of frontal being given in millimetres, and the capacity in cubic centimetres.

No. 8,329. Cranium, imperfect. Adult, probably male. Length 178. Breadth 146. Height 142. Width of Frontal about 92. Index of breadth .820. Several small Wormian bones developed in the lambdoidal suture. Posterior portion of the right parietal and the adjoining portions of the occipital much flattened or pressed forward, with a corresponding projection of the right frontal. From a cave near Gibson's Station, Lee County, Virginia. Collected by Mr. CHARLES B. JOHNSON, of that place, and deposited by the KENTUCKY GEOLOGICAL SURVEY.

No. 8,330. Cranium, imperfect. Probably a male, adult. Length 172. Breadth 140. Width of Frontal 89. Index of breadth .813. Posterior portion of the right parietal and the adjoining part of the occipital much flattened. The frontal natural, both sides being equally well rounded and arched. From a cave near Cumberland Gap, Tennessee. Collected by Mr. LUCIEN CARR, and deposited by the KENTUCKY GEOLOGICAL SURVEY.

No. 9,740. Cranium. Adult male. Capacity 1,393. Length 172. Breadth 140. Height 140. Width of Frontal 91. Index

of Breadth .813. Right parietal very slightly compressed. A small and round supernumerary tooth projects from the inner edge of the superior right maxillary between the first and second molars. From grave No. 3, four feet below the surface, in the side excavation of the Ely Mound, near Rose Hill, Lee County, Virginia. Exploration of Mr. LUCIEN CARR.

No. 9,746. Cranium, imperfect. Adult; probably a female. Length 154. Breadth 148. Height 136. Index of breadth .961. Much flattened from behind. The third molar in the left superior maxillary absent, though on the opposite side it is fully developed. A small epactal exists. From grave No. 2, six feet below the surface in the side excavation of the Ely Mound, Rose Hill, Lee County, Virginia. Exploration of Mr. LUCIEN CARR.

No. 10,229. Cranium, imperfect. Adult; probably a female. Length about 181. Breadth 128. Breadth of Frontal 93. Index of breadth, about .707. Wormian bone in the lambdoidal suture. From an Indian grave at Saugus, Mass. Collected by Mr. JOSEPH BALLARD. Presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

No. 10,230. Cranium, imperfect. Adult; probably a male. Length 188. Breadth 137. Height 133. Width of Frontal 100. Index of breadth .728. From an Indian grave at Saugus, Mass. Collected by Mr. JOSEPH BALLARD. Presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

No. 10,231. Cranium. Adult; probably a female. Capacity 1,268. Length 172. Breadth 133. Height 136. Width of Frontal 83. Index of breadth .773. From Saugus, Mass. Presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

No. 10,246. Cranium. Probably an aged female. Capacity 1,268. Length 180. Breadth 138. Height 136. Width of Frontal 92. Index of breadth .766. From Bickford's Lawn, Marblehead, Mass. Collected by Mr. D. R. BICKFORD. Presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

No. 10,249. Cranium, imperfect. Adult; probably a male. Length 196. Breadth 135. Height 148. Width of Frontal 95. Index of breadth .692. By reference to a Table of Measurements of Skulls, given by Prof. W. B. Dawkins (Cave Hunting, p. 236), it will be seen that in length and breadth this skull closely approximates the Engis skull, though it is a fraction narrower, the index of breadth in the latter being .700. In the thickness of the su-

praciary ridges, however, it rather resembles the Neanderthal skull. Its length, as given above, measured through the glabella and the most prominent part of the occiput, is 196^{mm}, but measured through the depression just above the glabella, it is only about 188^{mm}. The difference between the two, amounting to about 8^{mm}, shows the extent of the protuberance of the supraciliary ridges. From an excavation on the corner of Essex and Cambridge streets, Salem, Mass. Presented by the PEABODY ACADEMY OF SCIENCE, Salem.

No. 10,259. Calvaria, imperfect. Length 178. Breadth 141. Height about 130. Width of Frontal 88. Index of breadth .792. The sagittal suture is nearly obliterated. This skull was found beneath a shellheap at Pine Grove, near Salem, Mass., and is believed by Mr. Putnam to be the oldest ever found in New England. It is interesting from its resemblance to Crania from the Burial Mounds of Florida. Collected by Mr. CALEB COOKE, and presented by the PEABODY ACADEMY OF SCIENCE, Salem.

No. 10,273. Cranium. Aged male. Capacity 1,534. Length 171. Breadth 150. Height 150. Width of Frontal 96. Index of breadth .877. Epactal or "Inca" bone developed. From a mound inside the fortification at Merom, Indiana. Collected by Mr. F. W. PUTNAM, and presented by the PEABODY ACADEMY OF SCIENCE, Salem, Mass.

No. 11,023. Cranium. Aged male. Capacity 1,374. Length 181. Breadth 136. Height 141. Width of Frontal 91. Index of breadth .751. Epactal bone developed. From Ash Cave, Hocking County, Ohio. Exploration of Prof. E. B. ANDREWS.

No. 11,040. Cranium, imperfect. Adult male. Length 173. Breadth 143. Height 140. Width of Frontal 96. Index of breadth .826. Small Wormian bone developed in the lambdoidal suture. From the banks of the French Broad River, above Knoxville, Tennessee. By purchase.

No. 11,041. Cranium. Adult male. Capacity about 1,367. Length 163. Breadth 143. Height 144. Width of Frontal 90. Index of breadth .877. Epactal bone developed. Left parietal and adjoining portion of the occiput flattened. The frontal also compressed, the left side slightly projecting. From an island in the Tennessee River, 18 miles below Chattanooga. By purchase.

R E P O R T
ON THE DISCOVERY OF SUPPOSED PALEOLITHIC IMPLEMENTS FROM
THE GLACIAL DRIFT, IN THE VALLEY OF THE DELAWARE
RIVER, NEAR TRENTON, NEW JERSEY.

BY CHARLES C. ABBOTT, M.D.

I HEREWITH report the results of my investigations in the valley of the Delaware, made with reference to the occurrence of supposed paleolithic implements in the gravel beds facing that stream, based upon a series of careful examinations of the deposits, in question, made at different points, together with a study of the surface soils, so far as these, of themselves, and by their contained relics, bear upon the question of the origin and character of the specimens of stone implements taken from the underlying gravels.

The chance occurrence of single specimens of the ordinary forms of Indian relics, at depths somewhat greater than they have usually reached, even, in constantly cultivated soils, induced me, several years since, to carefully examine the underlying gravels, to determine if the common surface-found stone-implements of Indian origin, were ever found therein; except, in such manner as might easily be explained, as in the case of deep burials, by the uprooting of large trees, whereby an implement lying on the surface or immediately below it, might fall into the gravel beneath and subsequently become buried several feet in depth; and lastly, by the action of water, as where a stream, swollen by spring freshets, cuts for itself a new channel, and carrying away a large body of earth, leaves its larger pebbles and possibly stone implements of late origin upon the gravel of the new bed of the stream.

By all such means, I have found that the most elaborately wrought Indian relics have occasionally been buried at considerable depths. I also found, however, that there did occur in these underlying gravels, certain rudely shaped specimens of chipped stone, which have all the appearances of the stone implements of paleolithic times.

Nearly the entire series of the specimens referred to have been forwarded to you, and very many of them pronounced by com-

petent judges to be unquestionably "chipped implements." In this opinion, I concur. I find, on comparing a specimen of these chipped stones with an accidentally fractured pebble, that the chipped surfaces of the former all tend towards producing a cutting edge, and there is no portion of the stone detached which does not add to the availability of the supposed implement as such; while in the case of a pebble that has been accidentally broken, there is necessarily all absence of design in the fracturing. Although the portions detached from a supposed stone implement are chipped with reference to the natural cleavage of the stone—with some few exceptions, an indurated clay-slate, the other specimens being of phonolite, and other trappean rock, both of which occur in place, in the valley of the Delaware, some thirty miles north of where these specimens were found.—these larger surfaces, the results of single cleavages, are supplemented by minor chippings along the edges, thus giving every indication of the original zigzag edge having been made comparatively straight by more careful work subsequently put upon it. This, of course, does not appear on a naturally fractured pebble. These characteristic chippings obtain in the large jasper hoes and hatchets of the Indians, and a comparison of these with the ruder forms found in the gravel, shows that identical means have produced the two forms; the variance being only that which want of skill in flint-chipping will explain.

There exists, also, a similarity in the series of these supposed implements which would scarcely occur in the case of naturally broken pebbles, whatever the force brought to bear upon them. They admit of classification into a primitive form, which I have elsewhere ("American Naturalist," vol. x, p. 331) designated as a "turtle back" celt, and modifications of this form, into hatchet, spear and scraper. Now while naturally broken pebbles may often approach in shape any of these forms of stone implements, it may at once be seen that it is, in every case, but an accidental resemblance. The outline is obtained, but not that subsequent chipping that gives the implement such finish as would make it desirable for use. The gravel bed, in which these "turtle back" celts and their modifications have been found, contains a small percentage of angular pebbles, that have not lost all trace of the peculiar surface of a recent fracture, and therefore are not as smooth and uniformly polished as an ordinary pebble. Such specimens, when

bearing marked resemblance to those clearly of artificial origin, may in fact have been fashioned by man, and only partially lost, by the polishing action of water and sand, those indications of artificially produced fractures, such as characterize the specimens here figured; but as a rule, the angular pebbles are of natural formation, and their imperfectly ground and polished surfaces give evidence of the possibility, that, under favorable circumstances, a chipped implement might be associated with such gravel, from the time of its deposition, and yet escape the obliteration of those features that demonstrate its artificial origin. The deposit may be described as largely made up of ordinary smooth, water-worn pebbles varying in size from half an inch in diameter, to boulders estimated to weigh from one to twenty tons.

Convinced that the so-called "turtle back" celts, which are the most primitive form of the chipped implements of the gravels, really are of artificial origin, many of which are identical in shape with the ordinary forms of European drift implements, and furthermore that among the specimens found, is one unquestionable spearhead-like implement, there can, I think, be little doubt but that these specimens, unassociated as they are with the common forms of surface-found relics of the Indians, are in reality traces of an earlier and a ruder people, who occupied the eastern shores of this continent prior to the advent of the latter race.

Figure 1, *a*, *b*, represents a specimen of these rude implements, which, unlike the so-called "turtle-back" celts, is distinctly chipped upon both sides, and has but a slight amount of secondary chipping. The cutting edges, however, are comparatively straight. This and other examples of the supposed stone implements have been submitted to Prof. M. E. Wadsworth of Cambridge, to determine their mineralogical character, as this has an important bearing on the question of the fracturing being of natural or artificial origin. Mr. Wadsworth remarks of this specimen, "It is an Argillite. It is highly indurated, with a conchoidal fracture, without cleavage, and fuses to a yellowish green or white glass which is feebly magnetic. The weathering which it shows could hardly have taken place except before it was covered with soil; it might possibly, but I think not probably, in a loose, open gravel. It is not at all likely to be of natural formation." The specimen is figured of natural size, and requires no further description, other than to remark that it was found in the *undis-*

turbed gravel of the bluff facing the Delaware, at a depth of six feet from the surface.

I have purposely emphasized the word "undisturbed," inasmuch as in all cases of the finding of these chipped implements, on the face of a bluff, it is necessary, as Prof. Pumpelly has kindly

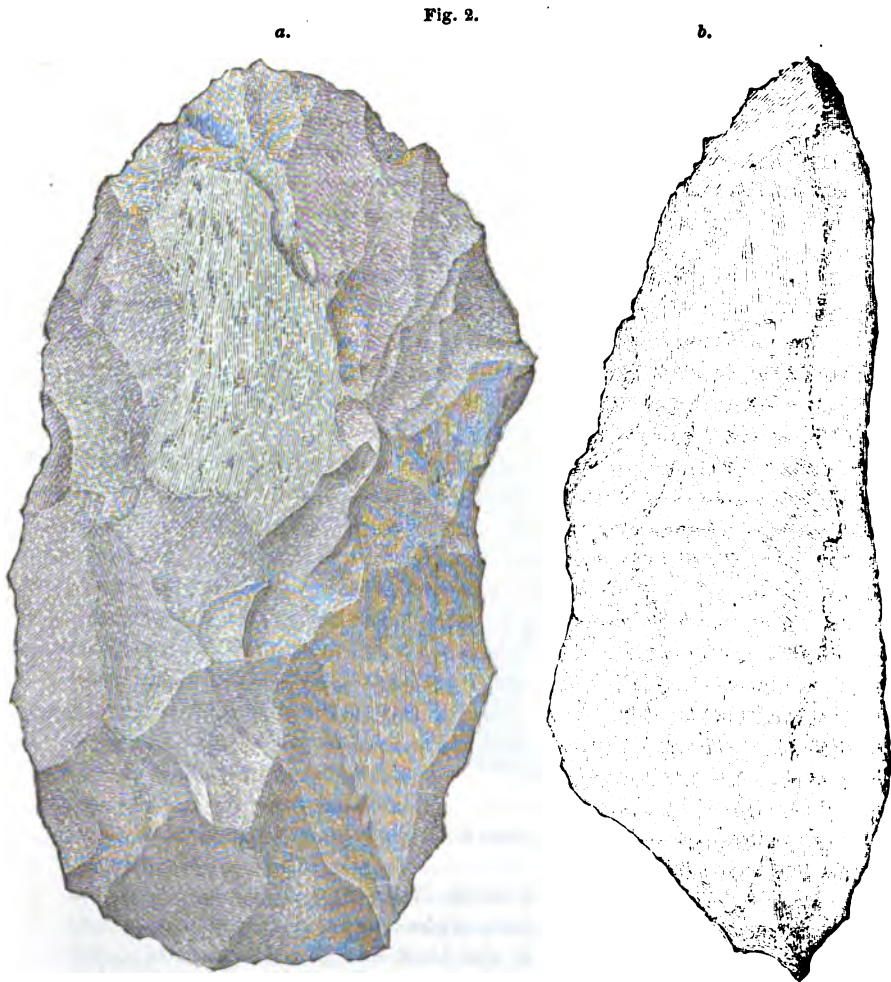
FIG. 1.



Celt from the gravel; a, face; b, side view. Nat. size. Mus. No. 10990.

pointed out to me, to determine that such specimens occur in the gravel as it exists when first exposed, and not in a talus that may have formed at the base of the bluff, and in some cases extended upwards, nearly to the top; for in a talus, it will be readily seen, that a chipped implement might have very recently fallen from the surface, and be now buried several feet from the face of the bluff. This possible occurrence has been duly considered in every instance, and no such displacement evidently had taken place, in

the instance of the specimen here figured, or in that of many others found by me, both before and since. Specimens, identical in every characteristic feature with fig. 1, have been frequently



Celt from the gravel; a, face; b, side view. Nat. size. Mus. No. 10985.

found in the extensive talus at the foot of the bluff, and have been labelled as thus found, when forwarded to you, and the pos-

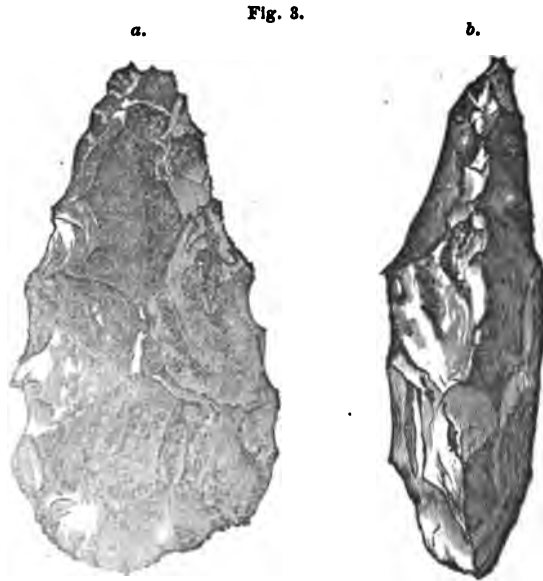
sibility of their not having been originally associated with the gravel noted. But a talus, if carefully examined, will show whether it is likely to contain much of the soil proper. In the case of the bluff facing the Delaware, there is a shallow deposit of light sandy soil, of about fifteen inches in depth, and then the gravel in a slightly stratified condition in some limited spots, but usually in the unassorted condition characteristic of glacial drift. In the talus which now covers much of this bluff, there is nothing but the uniform mass of rounded and angular pebbles, and with them such chipped implements as the specimens here figured. As already pointed out, why should this recently displaced material only yield the rudest forms of chipped stone implements, when the surface is literally covered, in some places, with ordinary Indian relics; not a specimen of which has, as yet, occurred in this gravel? But the fact remains that in gravel, where no displacement has occurred, many of the well marked forms of unquestionable stone implements have been found.

Figure 2, *a, b*, represents a more carefully wrought specimen of these rude implements, measuring nearly five inches in length, by two and one-half inches in average breadth; and less than two inches in greatest thickness. It is an excellent example of that form that I have previously referred to, as a "turtle-back" celt. Of this specimen Mr. Wadsworth remarks, "as far as can be told from examining its external surface, without any fresh fracture, I should consider it to be made of very compact argillite. It shows weathering, and also a more recent fracture, which has weathered to some extent. I should consider it very doubtful if this could be formed naturally." This specimen, like the preceding, came from the bluff facing the river. It was taken out from a newly exposed surface, after making an excavation of fully three feet from the exposed face of the bluff; which was itself evidently the undisturbed gravel.

Figure 3, *a, b*, represents the spearhead-like implement previously referred to. The illustration shows at a glance, the artificial origin of the specimen. It is made of flint, and is the only instance, as yet, of the occurrence of a drift implement of this mineral. This specimen was taken from the gravel, at a depth of six feet from the surface, on the site of the Lutheran Church, Broad street, Trenton, N. J. It was found lying in situ, in a shallow stratum of coarse pebbles, and clearly showed by its surroundings

that it had not gotten in its position, where found, subsequently to the deposition of the containing layer of pebbles.

These three specimens clearly show the general character of the entire series of these gravel bed implements; and the careful drawing of the artist renders further reference to them unnecessary.



Spearpoint from the gravel; a, face; b, side view. Nat. size. Mus. No. 10986.

If the conclusions, at which I have arrived, concerning the specimens themselves, be correct, we are brought at once to the more difficult question; in what manner and when came these stone-implements in this gravel? Are they as old as the containing bed, and therefore fashioned at a time preceding and during its deposition?

Convinced that the specimens are all of artificial origin, I have endeavored to determine, if possible, how they came to be associated with the gravel at such great depths; varying from five to over twenty feet below the overlying soil. My first impression was that they must have worked down gradually from above, yet I could not see how this could take place, and there was not a trace of indication that the gravel had been at all disturbed since its

deposition. Also, if these rudé forms were of identical origin with common Indian relics, then rude and elaborate alike; jasper, quartz, porphyry and slate together; axes, spears, pottery and ornaments, all of which are found upon the surface, should have gradually gotten to these depths. Any disturbance that would bury one, would inhumé alike the various forms of neolithic implements. Such, however, is not the case; and this one fact is, I think, of itself sufficient to show that there is a distinction to be drawn between these roughly chipped implements and the skillfully wrought productions of the Indians.

If I have now succeeded in setting aside the several objections that may be urged in advance, of these supposed implements not being such, and, also, of there being a comparatively recent addition to the containing bed; it is obvious that the same forces that spread the gravel over the wide area that it now covers, carried also these productions of an early race, once inhabiting this continent when its physical geography differed materially from the present. In this case, it may be asked, ought not these implements to be distributed equally throughout the area of the deposit. I have carefully considered this, and hoped to give a satisfactory reply by finding these same forms in widely separated localities; but in this I have failed, unless the exception of a single rude spearhead be accepted as indicative of a comparatively wide distribution of these paleolithic relics; this single specimen being taken from gravel, some distance from the river shore, and a mile from the bluff where the bulk of the collection was discovered.¹ It must be remembered, however, that the gravel generally, has not been systematically examined, and we do not know that these same implements are not abundant even elsewhere; although this I consider doubtful, inasmuch as they were probably not as numerous originally as the stone implements of the Indians subsequently were; and the majority would, I suppose, be broken and worn to ordinary oval pebbles, in the rubbing and grinding together of these and other fragments of rocks, while being transported either by ice or water. But may not the fact that the Indian relics of the surface are not abundant everywhere be adduced as partially

¹ Since the above was in type, I have been successful in discovering several well marked specimens, in many and widely separated localities, and am now led to believe that they will be met with in the gravel beds wherever occurring in Southern and Central New Jersey.

explanatory of the irregular occurrence of the paleolithic implements of the gravel? We know that frequently many hundreds of acres in extent may be carefully searched and not a fragment even of a relic be discovered; while near by, a scanty area of half an acre may yield hundreds of specimens. In times preceding the formation of this gravel bed, now, in part, facing the Delaware River; there were doubtless, in the same way, localities once the village sites of pre-glacial man, where these rude stone implements would necessarily be abundant. May not the ice, in its onward march, gathering in bulk every loose fragment of rock and particle of soil, have held them loosely together, and, hundreds of miles from their original site, left them in some one locality, such as this we have been considering; where the river has again brought to light, rude implements that characterize an almost primitive people?

But assuming that the various stone implements fashioned by a strictly pre-glacial people have been totally destroyed by the crushing forces of the glacier, and that the specimens forwarded to you were not brought from a distance, may they not be referred to an early race, that, driven southward by the encroaching ice, dwelt at the foot of the glacier, and during their sojourn here these implements were lost?

You will have noticed that I have uniformly spoken of this gravel bed as one of glacial origin. I will now report to you, in detail, the more marked characteristics of the deposit, upon which I have based my conclusion that such is its age and origin. At the point most carefully examined, the eastern bank of the Delaware River, at the head of tide water of that stream, this deposit forms a bank varying from thirty to eighty feet in thickness, measuring from low-water mark upward. To what additional distance beneath the bed of the river the gravel may reach, I have not determined; that it may be many times this depth in places is very probable. Prof. Cook mentions, in the "Geology of New Jersey," page 341, that "in the Azoic and Paleozoic regions of the state, the denudation has been very extensive; but it is not so easy to measure its amount, as it is not at all probable that the surface was smooth when the denudation, whose marks we now see, was in progress. That it must have been very great we may safely infer from the immense quantity of material which we can identify from the gneiss, the Potsdam sandstone, the Magnesian

and Fossiliferous limestones, the Oneida conglomerate, and the whole series of Upper Silurian rocks, which are now scattered all over the state quite to Cape May." Elsewhere, speaking "of this wear and movement of earth, gravel and boulders," the same writer remarks, "in some localities, as along the highlands from Boonton to Pompton, every notch in the mountain has a hill of drift opposite to it, on the open plain to the south-east," and again, "the rounded surface of the rocks, in the highland, the Paleozoic and the Trap ridges, the regular and parallel scratches upon these surfaces, and the deep furrows worn in the softer rocks, all prove that some more rigid force than that of water has been in operation all over the country. . . . These effects, as well as the carrying of boulders point to ice as the effective agent in producing them. Two skulls of the walrus, an animal living only in polar seas, have been found in the gravel near Long Branch.² They indicate a period of cold*more severe than any that now prevails."

Inasmuch as the drift deposits throughout New Jersey, are thus ascribed to the action of ice, and as this that I have described, in all respects accords with the description of those above mentioned, the remarks of Prof. Cook are equally applicable to it. Let me here mention, in passing, that the bank lies directly south-east of the rocks in situ, and highlands of the Delaware Valley, down which a glacier doubtless moved; if indeed it was not a portion simply of that great glacier that extended "from New England to the Rocky Mountains;" and here, or very near this point, terminated in the Atlantic. If so, we have in this extensive deposit of gravel, sand, and boulders, a terminal moraine.

Since the original draft of my report was written, I have profited by the experience of Professors Shaler and Pumpelly, who have kindly visited the principal localities, and examined them carefully. Both remarked on the absence of ice scratches on the pebbles and boulders forming the deposit, and consider it as one originally of glacial origin, but subsequently modified by water action, whereby more or less stratification has taken place. Inasmuch as such subsequent action may have occurred long after the final deposition of the gravel, as true glacial drift, the antiquity

² Prof. Smock, Assistant State Geologist, informs me that the gravel at Long Branch is of the same age as that at Trenton, so far as one can determine. Nothing as yet goes to indicate that it is of later or earlier origin. It may be mentioned, too, in this connection, that rolled fragments of reindeer horns have occasionally been met with in these same gravels.

of the contained stone implements is proportionately lessened, and may be wholly unconnected with the glacial period, although the latest possible date that can be assigned to the deposition of the gravel in its present condition, gives an antiquity to the implements found therein, far greater than can be asserted of any previously found traces of man in North America, other than the discoveries of Prof. Whitney in California.

I am not, however, disposed to entirely dissociate the gravel beds more particularly described in this report from the era of the close of the glacial epoch proper, for the following reasons. If, as the general topography of the country south and south-east of this bluff indicates, this glacial *débris* was deposited in open water, on the bed of a shallow sea. The entire absence of clay in the bluff shows that it has been washed out, as the mass became freed from the ice, and floated off; the gravel and sand immediately sinking. While it cannot be shown that the gravel and boulders might lose their scratches before being freed from the ice, may it not be that the ordinary agitation of the waters of a shallow sea would polish the pebbles strewn over its bed, and thus the connection of the gravel in its present condition with the glacier be necessarily close? There can be no doubt that the locality here treated of, *i. e.*, South and Central New Jersey, marks the termination of the glacier on the Atlantic coast. The *débris* brought from the north and north-west was not, as far south as Trenton, caught by the inequalities of the surface, and valleys thereby filled up with accumulations of typical glacial drift. In such cases, the material forming the deposit bears the marks of the crushing, scratching and polishing action of the ice. This is a characteristic feature of the drift as seen in the northern hilly portion of the state. At Trenton, and southward to Cape May, this same glacial *débris* is free from all such ice-scratches; but, it must be borne in mind, it was not originally left upon the surface of the ground, but, carried to the open waters, was gradually deposited by the slow melting of the ice. Here, exposed to strong currents and more or less violent beach action, and intimately associated with coarse sharp sand, would not the tendency be to obliterate uneven surfaces, and polish every pebble?

In such a case, it would be reasonable to suppose that a chipped stone implement, becoming associated with this sand and gravel, would likewise lose every characteristic feature that marks its

artificial origin. I have already called attention to the possibility of certain angular pebbles in the gravel, bearing much resemblance to stone implements, having been such, and can only add that there does exist in the Trenton gravels sufficient instances of irregularly shaped pebbles, that are not polished or rounded upon their edges, to indicate the possibility of the preservation of such specimens, as we have seen, do occur in the gravel beds in question.

In this connection, let me call attention also to the fact, that the glacier was associated with a marked depression of the whole southern half of the state. The mouth of the Delaware, if, indeed, the river then existed, was here at Trenton, and not, as now, at Cape May, one hundred and twenty miles distant. Since the retirement of the ice, as a glacier, the land has again been elevated, and while slowly gaining its present height the Delaware and other southern flowing rivers of the state have worn away the valleys they now traverse and cut the channels they now occupy.

Now, the fact that these supposed relics of a glacial people occur at different depths in the gravel must, too, be considered. This, of itself, seems confirmative of the opinion that man dwelt at the foot of the glacier, or at least wandered over the open sea, during the accumulation of this mass of sand and gravel. There is no evidence of any violent overturning of the entire mass long subsequent to the original deposition by the glacier, and if the implements were made, used and lost after the deposit ceased forming, but prior to its elevation, then they would necessarily occur only in or very near the top or surface of the bed.

At that point where I have gathered the majority of specimens, there is a want of stratification; but at several points, I have found, extending over limited areas, a marked separation of the material generally, into fine sand, coarse gravel, and again fine sand; seeming to show that the floods of the succeeding period reassorted the deposits, in some few places, but that the deposit generally was protected from them.

I have frequently referred to the presence of boulders, both in the gravel bed and upon the surface of the ground. Many of these are eight and ten feet in diameter; some more than twice this size. Mineralogically they vary considerably. Prof. Geikie has described as characteristic of all the river valleys in England, that the upper levels consist of coarser material than the lower, "and

frequently contain large blocks of stone which could only have been transported by river-ice;" while the lower level gravels are usually of finer grained character, and that these "seemed to point to a milder condition of things—to a time when the rivers were less liable to flood, and the ice-rafts were uncommon" ("Great Ice Age," American Ed., p. 435). From an examination of the bed as now exposed on the bank of the Delaware River, I do not find that any such distinction can be here drawn. By actual count, in a section I measured off, there did not occur more large boulders above the line equally dividing the bluff, than below it, but on the contrary three more beneath; not counting those that had rolled from the bed down to the water's edge. This of itself would be by no means conclusive; but I found, upon frequent enquiry of men who had sunk wells and excavated cellars, that these boulders were usually met with in greater abundance, at considerable depths, than near the surface. This irregularity of their occurrence and position is, I think, indicative of the glacial origin of the deposit. These large boulders are also met with upon the surface. I have very carefully examined many of these, in situ, and am convinced that these were not deposited with the gravel beneath them, and that the latter has been subsequently removed by rapidly running water, for I find in nearly every instance, a foot or more of soil between the lower surface of the stone and the gravel, and this layer so extended beyond the limits of the boulder, that it unquestionably was slowly accumulated prior to the depositing of the latter; and in such a stratum, immediately beneath a stone that would weigh at least half a ton, I found a well chipped, spear-shaped implement. These surface boulders I believe to have been dropped from ice-rafts, together with sand and gravel; the ice then floating over a broad expanse of country, in comparatively quiet waters, from which slowly settled the fine sand and other material that subsequently became the surface soil.

The presence of these boulders upon the surface bear upon the fact of the occurrence of rude implements identical with those found in the underlying gravels, inasmuch as the same ice-raft that bore the one, with its accompanying sand and gravel, might well gather up also, stray relics of this primitive people, and re-deposit them, where they are now found.

I will now, in conclusion, briefly summarize the several facts to

which I have called your attention, together with the deductions I have drawn.

Having shown, as I think, that the deposit examined is glacial drift; and that the stone implements found therein could not have reached their present position at any time subsequent to the formation of the deposit; and having placed beyond doubt, I think, the question as to whether these rudely chipped stones be of artificial origin or not, by the discovery of an unquestionable spear-point fig. (3,) associated with them, I am led to conclude that the rude implements found in the gravel were fashioned by man during the glacial period, and were deposited with the associated gravels as we now find them.

That the similar surface relics may also be glacial in age, and were dropped from melting ice-rafts during the retirement and destruction of the southern limit of the ice, and finally, that inasmuch as it is probable that this early race was driven southward by the ice, and returned northward, following the shrinking of the glacier, that many of these surface-found implements were made by this same people, when re-occupants of the country.

REPORT

ON THE AGE OF THE DELAWARE GRAVEL BEDS CONTAINING CHIPPED PEBBLES.

BY N. S. SHALER.

I HAVE hastily examined the deposits of gravel on the shore of the Delaware River below Trenton, New Jersey, with a view to ascertaining the geological relations of the various specimens of apparently worked flints first made known by the researches of Dr. Abbott. It will require the further and detailed study of these deposits to fix with certainty all the geological circumstances of these singular specimens, but their general conditions are such as to make it possible, even on a cursory examination, to establish certain points with an approximation to accuracy.

The specimens in question are found in a deposit of drift material which constitutes the first or lowest terrace on the north side of the river. This terrace is of indefinite width, being apparently identical in height and structure with a good deal of the country to the north of the river valley. The top of the terrace is probably between twenty and thirty feet above the highest freshets of the stream. The tide rises and falls several feet at the foot of the bank.

There is, as is usual along our rivers, more or less undermining of the gravel cliffs. None of these sections are so complete as to show the beds in their unchanged position. Even the freshest looking exposures have had a certain sliding action of the material exposed, so that it is not possible to say that any fragment found thereon is in just the place where it lay before the retreat of the cliff brought the escarpment to its present position.

The general structure of the mass is neither that of ordinary boulder clay nor of stratified gravels, such as are formed by the complete rearrangement by water of the elements of simple drift deposits. It is made up of boulders, pebbles and sand, varying in size from masses containing one hundred cubic feet or more to the finest sand of the ordinary sea beaches. There is little trace of true clay in the deposit. There is rarely enough to give the least trace of cementation to the masses. The various elements

are rather confusedly arranged; the large boulders not being grouped on any particular level, and their major axes not always distinctly coinciding with the horizon. All the pebbles and boulders, so far as observed, are smooth and waterworn; a careful search having failed to show evidence of distinct glacial scratching or polishing on their surfaces. The type of pebble is the sub-ovate or discoidal, and though many depart from this form, yet nearly all observed by me had been worn so as to show that their shape had been determined by running water. The materials comprising the deposit are very varied, but all I observed could apparently with reason be supposed to have come from the extensive valley of the river near which they lie, except, perhaps, the fragments of some rather rare hypogene rocks. My acquaintance with the archæan rocks of the Delaware basin is too limited to enable me to determine whether the origin of certain peculiar granitic rocks represented in these deposits must be sought beyond its area.

The specimens of supposed implements are found in great plenty along these escarpments facing the Delaware. A search of three hours enabled us to find two of the most artificial character, and my companion, Dr. Abbott, had previously searched the whole cliff with great care. Although the whole face of the escarpment is in motion, creeping slowly under the influence of frost and gravity towards its base, it was difficult to believe that these specimens found about twelve feet below the top of the bank had travelled down from the superficial soil. At other points Dr. Abbott has found those remains under conditions that make it quite unquestionable that they were deposited at the depth of many feet below the soil, and are really mingled with the drift matter that forms the section before described.

Along with the perfect looking implements figured by Dr. Abbott, which are apparently as clearly artificial as are the well-known remains of the valley of the Somme, there are all grades of imperfect fragments down to the pebbles that are without a trace of chipping. All that I have seen, with a single exception, both of the perfectly and the imperfectly chipped fragments are made of a curious granular argillite, the like of which I do not know in place. Thinking it proper to examine into the question whether this chipping had resulted from any natural action, which seemed the more possible since the supposed implements are often clearly natural pebbles that have been chipped on their edges. I sought

in the gravel for the fragments which would have been made in the process, but failed to find any such fragments. This fact, together with the general condition of the chipped surfaces, satisfies me that the pebbles were chipped before the waste which constitutes this mass was brought into its present position.

The origin of these terrace deposits is a matter that cannot be readily explained. I have been studying the beds of this general character for eighteen years without gaining a sense of certainty as to their origin. The general nature of the problem can be briefly stated. First as regards their distribution we may say that they occur from Virginia northward to Labrador and probably beyond, though, owing perhaps to the more rocky nature of the shores beyond Portland, Maine, they are less conspicuous on the northern part of the shore than in the district between the Chesapeake and Boston. Whenever found these masses are in structure uniformly such as we find them here; scarcely if at all distinctly stratified, yet wanting the scratched pebbles and without the cement of clay which is so characteristic of the *till* or the unchanged glacial waste left by the ice sheet. The water-worn character of the pebbles, the approximation to a level of the upper surface of the mass, make it plain that these beds were laid down beneath the water. The entire absence of organic remains in the mass proves that it was essentially a lifeless sea in which they were laid down. I am disposed to consider these deposits as formed in the sea near the foot of the retreating ice-sheet when the sub-glacial rivers were pouring out the vast quantity of water and waste that clearly were released during the breaking up of the great ice-time. There is good evidence in the little pits that cover this table land drift to show that masses of ice were often built into the gravel and melting slowly left a depression where their water had slipped away through the gravel. These small floats of ice probably dropped the greater boulders, while the smaller bits were carried to their resting places by the currents of outflowing glacial water or by the tides. The rising of the land after the passing away of the ice-sheet has lifted these masses of semi-stratified materials to their present height above the sea.

Constructing a hypothesis for the condition of these pebbles on the assumption that they owe their form to forces that antedate the deposition of the beds in which they are found, I am driven to the following suppositions:—

That they were made in a region where water-worn pebbles greatly abounded as they now do all along our shores, and that pebbles of a peculiar composition were selected: that these pebbles were then removed by forces connected with the operations of the glacial sheet, by running water or floating ice, or perhaps both coöperating, and deposited with great rapidity in their new positions. In this action the pebbles were not carried far.

If these remains are really those of man, they prove the existence of interglacial man on this part of our shore.

I hope hereafter to finish a detailed account of the geology of these gravel beds, and to support these preliminary statements by evidence in the way of sections and maps.

REPORT

ON EXPLORATION OF ASH CAVE IN BENTON TOWNSHIP,
HOCKING COUNTY, OHIO.

BY PROFESSOR E. B. ANDREWS.

THIS cave is simply a large recess under a high sandrock (of the Waverly sandstone series) bordering a small stream. The top of the ledge is perhaps 100 feet high above the stream. A little distance up the narrow valley, the valley proper ends in a semi-circular cliff, over which the water falls in a single unbroken sheet. The work of erosion of this and similar valleys has been chiefly done by the action of spray from the falls, as shown in "American Journal of Science," Oct., 1876, p. 304.

The shelter of the overhanging rock at the "Ash Cave" appears to have been a very perfect one, since the ashes are very dry and appear never to have been wet. The recess opens to the east and driving storms do not come from that quarter.

The ash-heap is about 100 feet long by about 30 feet wide, and where our trench was dug, nearly $2\frac{1}{2}$ feet deep,—an enormous pile of ashes to be gathered in one spot.

A trench was dug upon a point a little east of the ash belt to the back wall of the shelter as shown in the diagram; little was found at first except ashes with an occasional fragment of a food-bone and chip of flint, but as the wall-rock was approached we came upon a well defined refuse heap of bones, etc. It was a confused mass of sticks for arrows, stalks of coarse grasses, food-bones in great variety, bits of pottery, flints, nuts, corn-cobs, etc., etc. This layer of refuse was from 4 to 6 inches below the surface, and covered with ashes. Below this refuse layer was the chief deposit of ashes from $1\frac{1}{2}$ to 2 feet in depth according to the inequalities of the sand floor underneath. About 3 feet from the back wall of the "cave" and at the bottom of the ashes, we found a skeleton in a fair state of preservation, evidently that of an Indian. There were traces of bark over it to protect the body from ashes, but the bark was much decayed.

The body, doubtless, had been buried in a sitting posture, as the

bones were found compactly together, the head resting upon the others. Apparently the body had been placed against a small loose rock and in a cavity in the sand.

There were no traces of clothing about the skeleton, and no implements of any kind. On one side of the skeleton and quite near it was found, in a pocket in the sand, about three pecks of small black seeds, most carefully stored away. They lay directly upon the sand, which is perfectly clean, but above they were carefully protected from the ashes by a mat of ferns, grasses and coarse cloth. A portion of this covering was removed as it lay and is sent with the seeds. Professors Gray and Watson pronounce the seeds to be those of *Chenopodium album*, doubtless an indigenous plant, although not so regarded by some botanists. The seeds have lost their vitality and crumble to powder under slight friction. The fibres of the overlying cloth may also be easily rubbed to a fine brown powder between the fingers. It must be remembered that the ashes are dry and dusty and have probably never been wet, hence the decay of the cloth and seeds is a dry-rot such as would take place in a dry cabinet. The alkali in ashes so dry has probably had no effect upon them. On the other hand, some of the bones of the buried body are decayed from the effect of the ashes, the moisture of the body making the action of the alkali possible. The seeds never came in direct contact with the ashes, the ashes in those sent to Cambridge having been introduced in the form of flying dust at the time the digging was done by our party.

On the rock in the rear of the cave are cut some grooves and dots, which from the weathered appearance of the surface must be quite ancient. They are approximately shown in the drawing sent. I can detect no connected design in them. They are perhaps tally registers of some sort.

On a projecting point of the rear wall are several artificial vertical holes in the rock.

The largest hole is 6 inches in diameter and 2½ feet deep to loose stones evidently thrown in. Its full depth is unknown. Another is 4 inches in diameter and several feet deep. The earliest settlers found these holes as they now appear. Near the holes are some artificial lines and dots on the front of the rock.

I am inclined to consider the skeleton and seeds found in this ash cave relatively quite old. There are, so far as I can learn, no tra-

ditions of its occupancy by any Indians since the settlement of the country.

There are now no traces of ancient paths leading to the cave, and in its immediate vicinity the forest is as ancient as elsewhere in the primeval woods of the State. Furthermore, the decay of the fibres of the cloth over the seeds must have been extremely slow in the condition of dryness necessitated by the dry and dusty state of the ashes which covered it. Without doubt, the age of the sticks, pottery, etc., in the refuse layer near the top of the ashes is more recent.

In the visit to the Ash Cave, I was accompanied by Judge Silas H. Wright of Lancaster, a friend who takes a most intelligent interest in archæological matters, and by Mr. A. Freed whose tastes are botanical rather than ethnological. They rendered me valued aid in many ways.

REPORT

OF EXPLORATIONS OF MOUNDS IN SOUTHEASTERN OHIO.

BY PROFESSOR E. B. ANDREWS.

THE mounds examined are in Fairfield, Perry, Athens and Hocking counties. In Fairfield County, the mounds opened were found upon hills. They command extensive views, and if such views were deemed desirable by the builders we readily perceive the reason for the locations. There are known to me only a few mounds in the immediate valley of the Hocking. One of them, at Sugar Grove, is a very pretty mound, perhaps 15 feet high. A trench was dug through it two or three years since, but the result of the exploration I do not know. At Rock Mill about seven miles northward of Lancaster, where the Hocking River—there a small stream—flows over a ledge of the Waverly sandstone, are two circles or “forts” as they are popularly called. They are upon an adjacent hill, a short distance from the falls. One of the circles has a conical mound in the centre, the base of the mound reaching the edge of the ditch outside of which is the circular wall. This is the only case I have found in which the entire central space of the circle is filled with a conical mound.

The fine mound in the cemetery at Marietta is in a similar circle but there is considerable space between the base of the mound and the ditch. The great majority of these circles are without any central mound.

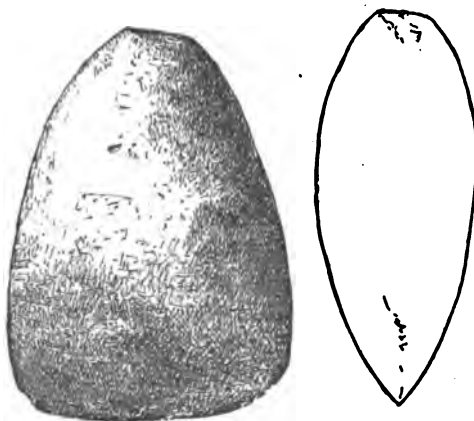
The mound in the circle near Rock Mill was opened many years ago; what was found in it could not be ascertained. A small mound, on the opposite side of the Hocking River, on a hill, was opened. A very few fragments of bones were found, nearly crumbled to a white powder. They could all be held in the cavity of the hand. The mound was very wet, and, except a mere trace, the skeleton it once contained had disappeared.

On a high hill, about one and a half miles north of Lancaster, is another circle with a small mound near by. The circle has a diameter of about 140 feet. It is not on level ground but in a slight depression at the head of a valley; its western edge is within

10 feet of top of the ridge. If the circle were a fort and designed for defence it was not well located. If for the storage of food supplies it was poorly located. If designed for religious purposes it was perhaps well enough. The entrance was from the west side. The mound near by is on a little higher ground and commands a very wide prospect. It is more than 300 feet above the Hocking River which flows in the valley on the west. The mound has an elevation of 5 to 6 feet and a diameter at base of about 30 feet. Nothing was found in the mound except charcoal which in places was abundant. Not a fragment of flint was found although flint arrows were picked up in the adjacent field. It is my belief that the moundbuilders had a settlement on this hill.

On Mount Pleasant, a bold isolated rock 285 feet high above the valley, situated in the suburbs of Lancaster, is a cairn of stones which is probably referable to the moundbuilders. The point has a fine view. It is reported that some years ago bones were found under the stones of this stone-mound.

Fig. 1.



CELT OF GREENSTONE, HILL MOUND. $\frac{1}{2}$ Natural size.
Museum No. 8946.

About two and a half miles northeast of Lancaster, on the top of a high hill, on the land of Mr. Wilhelm, is a small mound about 5 feet high with a diameter at base of from 40 to 50 feet. It commands a wide outlook. It was carefully explored. A finely wrought flint arrowhead was found about 2 feet below the top, and a greenstone wedge-shaped implement (Fig. 1), popularly called "skin dresser," handsomely wrought, was found perhaps 18 inches below the surface in another part of the mound. A little southeast of the centre and about 2 feet below the surface, was a confused pile of burnt sandstone rocks, none of which, however, were very large. Charcoal in small pieces was found with them

particularly called "skin dresser," handsomely wrought, was found perhaps 18 inches below the surface in another part of the mound. A little southeast of the centre and about 2 feet below the surface, was a confused pile of burnt sandstone rocks, none of which, however, were very large. Charcoal in small pieces was found with them

but nothing else, and nothing whatever was found lower in the mound. Fires had been built on the mound at different stages of its growth, but so far as I could see, they were either signal fires—the prominent and slightly location favoring such purpose—or fires for the comfort of persons stationed there. The ashes from such open fires on such a wind-swept point would almost necessarily be blown away.

On a hill a mile southeast of Lancaster are two mounds. They command extended views. One on the land of Mr. Stalter was opened. This is a small mound not more than 4 feet high with a base of perhaps 30 feet diameter. Burnt clay and pieces of charcoal and a single half wrought flint arrowhead were found. The earth of the mound was remarkably compact and hard. The other mound on the same hill a little farther west and on somewhat higher ground had been opened, with what results I do not know, and no examination was made of it by me.

On a spur of a ridge about two miles east of Lancaster is an earth-wall, evidently intended for defence. The ditch is on the outside of the wall where it should be according to modern ideas of defence. In this particular the earth-work differs from all the circles and so-called "forts" either circular or square, which I have seen, these having the ditch on the inside. The wall cuts off about an acre of ground of the extreme point of the spur. The top is comparatively flat, but the sides are very precipitous, there being a vertical ledge of sandrock for most of the distance. It is certainly a defensible point. I saw no signs of any excavation for water. The land is still covered with the original forest, and shallow excavations might in the course of ages have become filled with leaves, decayed logs, etc. Water is abundant in the valleys on each side. No mound was found in the vicinity of this defensive wall.

In PERRY COUNTY, three mounds were opened, all situated upon hills or elevated ground. Two were near each other about three miles northeast of New Lexington, on the land of Mr. Selby. Neither of them was on very high ground, certainly not on ground sufficiently elevated to make them desirable signal points. Nor was the land around them such as would be naturally chosen by the moundbuilders (who were evidently good judges of the soil) for purposes of cultivation. Some bits of charcoal were found, and a few fragments of flint, and a half-formed arrowhead; but

very careful search revealed no bones and no indications that the mounds were burial places. I could find no reason why these mounds were constructed. They were small mounds about 5 feet high. I saw no traces of "kitchen refuse" as a constituent of either.

Another small mound, one and a half miles from those last mentioned, situated on the south side of Rush Creek, about two miles east of New Lexington, was partly investigated, by making a single trench through the centre. It was a low mound much reduced in height by the long cultivation of the field in which it is situated. It is upon a fine bench of land and it is quite possible that there might have been a permanent settlement at this point. Many fragments of flint and charcoal were found and some evidences of "kitchen refuse." It is probable that further search would have revealed bones and relics.

At New Lexington, on a knoll near the railroad station, are many ancient flint diggings. The flint here constitutes a regular layer or stratum in the coal-measures and is about 4 feet thick. It is well exposed in the railroad cut on the side of the knoll. Geologically speaking the flint is a local modification of the Putnam Hill limestone, a well defined stratum of wide extent in southeastern Ohio. Many of the pits must have been from 6 to 8 feet deep.

The flint is fossiliferous and much of it is not compact enough for arrowheads, and around the old excavations are heaps of the rejected material. These excavations are now largely re-filled with earth and débris. I had no time to re-open any of them in search of the tools by which the flint was quarried. I have little doubt that these pits were sunk by the moundbuilders. They are now covered by the old forest trees and certainly could not have been resorted to by any of the later Indians. I sometimes find arrows and knives, the material of which I think came from these old quarries.

There is in the western part of Perry county, about two and a half miles east or southeast of Rushville, a large pile of stones on the top of a hill, which has the appearance of having been once an enclosing wall rather than the usual stone mound. The stones are large and angular, such as could have been built into a wall, and not the miscellaneous collection such as are thrown together in mounds. Although boulders of the drift are abundant in the region, no boulders are in the heap so far as I now recollect.

On a hill near Glenford Station, north of Somerset, in the same county, is a "fort" formed by a stone wall enclosing many acres. I have never visited it.

ATHENS COUNTY. My researches in this county have been as yet chiefly confined to a group of mounds found on what is termed Wolf Plain, situated in Athens and Dover townships. This is a terrace or drift plain, formed by the waters of the Hocking River bringing northern drift sand and gravel, and filling its ancient channel. Afterwards the river broke through a low gap in the range of hills between Salina and Chauncey into the old valley of Sunday Creek and now flows east of this range. The rough map which I send will show this. The Plain is probably not less than 80 feet above the present bed of the river. The northern and southern portions of the plain, where the small streams afford good drainage, are dry and the soil, being rich, afforded a desirable location for a large settlement of moundbuilders. Everywhere along the edges of the terrace perhaps 30 to 40 feet below the general level, are springs which afforded ample supplies of excellent water. Near these springs are marshy and miry places, and I know of no place in Ohio more likely to contain the bones of the mammoth and mastodon. Unfortunately ditches have never been dug by which my supposition might be tested. I find twenty-three separate earthworks on this plain, of which seven are circles or "forts" and sixteen conical mounds. They are located on the map, as nearly as I can do it without measurements of courses and distances.

The Circles are generally large and are all built after the same plan. There is a circular earth-wall, inside of which is a ditch. The earth from the ditch afforded generally the material for the wall, excepting in one or two cases where the irregularities of the surface required more earth than the ditch furnished.

The most perfect of these circles, or the one with the highest wall and deepest ditch, is that marked 20 on the map.¹ In many places the elevation of the wall above the bottom of the ditch is from 11 to 12 feet. The field has been cultivated for a great many years and the plow has both lowered the wall and partly filled the ditch. When first made, the distance from the bottom of the ditch to the summit of the wall must have been from 15 to 18 feet.

¹This map is not reproduced, but will be preserved at the Museum for consultation in connection with these references.—F. W. P.

The opening is on the east side, toward an open level space containing four or five acres. The circle is on the extreme western point of an outlier of the plain, separated from the rest of the plain by a small valley eroded by a little stream. It was located where there was not sufficient space for it, and on the north side the wall is upon an embankment by which the terrace is widened.

Perhaps this location was a little more defensible, with a very steep artificial bank on one side and one less steep on the other, but so many of these circles are on the open plain removed from the brow of the terrace, that I can hardly believe that any of these circles were designed for forts. If the circles were for some religious use, the priest or ruler might have merely consulted his whims in locating them. The circle just described, measured 312 feet (104 paces) in diameter from the outer limit-wall, and 120 feet diameter of the level area inside of the ditch. A large tulip tree (*Liriodendron tulipifera*), a veteran of the original forest, now grows from the ditch.

The circle numbered 19 on the map, has lost its wall on the south side, from the removal of the terrace bank near the edge of which it was doubtless originally placed. The terrace bank here is a sloping one, and the little run in the valley below is so far away that no currents of water could reach it. It could only have been removed by the action of rains during long ages, carrying down the sands, etc., particle by particle. There is no evidence that the waste was limited to the spot where the wall was. It was uniform along the whole brow of the terrace, the smooth line of contour being everywhere beautifully preserved. I think we have here proof of the very great antiquity of the mounds. The entrance to this circle was on the southeast side, very near the present edge of the terrace.

No explorations have yet been made in the circles in search of proof of the use of upright posts or palisades. If used for "forts" we should expect to find somewhere traces of such posts.

Mounds. There are seventeen conical mounds on Wolf Plain. The largest is that of George Connett on the northern part of the Plain. It is marked No. 6 on the map. This mound is 40 feet high, by a hasty determination with a Locke's level, and about 170 feet in diameter of base. The original forest trees are removed, but there are many apple trees and a few peach trees growing upon it, especially near the summit. No excavation has ever been made

in it. My friend Wyndham C. Jones, Esq., Civil Engineer and Secretary of A. and L. E. Railway Co., has computed the cubic contents of this mound to be 437,742 cubic feet. As will be hereafter seen, the mounds here were built by the adding of small quantities—about a peck in the average—to the growing heap. It would require for this mound 1,405,152 such loads of earth. Since the earth was taken evenly from the surface of the plain, there being no depressions or excavations anywhere to be found, it will be seen that the average length of the journeys to and from the mound must have been considerable. From these facts we can see how much human labor entered into the construction of the mounds.

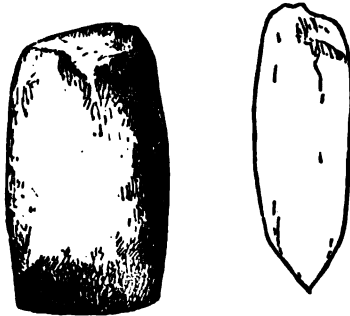
The Beard Mound.—No. 8 on the map. This mound is the second in size on the Wolf Plain, being about 30 feet high and with a diameter of base of 114 feet. The highway passes over one side of it and a considerable excavation has been made, leaving a nearly vertical bank of perhaps 15 feet in height. With the kind permission of Mr. Beard, I dug away more of this bank deepening the excavation to the original surface of the ground. Although I found no place of burial, and no human bones, yet I was able to study, to very good advantage, the method of constructing the mound. The clean vertical face presents a mottled appearance from the different colors of the materials used. The dirt was thrown down in small quantities—averaging about a peck—as if from a basket, and the outline of each deposit is generally very distinctly discernible. These outlines of each pile, or basket full, are somewhat oval, exactly what we should expect in a dump-heap made up in this way, of earth of different shades of color. The materials are yellow clayey earth, light loam, gravelly earth and a black earth, which I call “kitchen refuse,” the latter sometimes becoming lighter in color and composed of gray ashes. There is nowhere to be seen anything like stratification, from placing the materials in regular concentric layers as has been claimed in the structure of mounds. It is rather a vast pile of dirt thrown down without order or system, the sole object being to increase the magnitude of the heap. There was apparently no plan of working except to build up a conical mound in the most simple and convenient way possible. In the earlier stages of the Beard mound, the surface was very uneven, at one time it was lowest in the middle. The dirt was scraped up from the surface

of the plain, doubtless wherever it could be obtained most conveniently. . The builders probably had no tools for excavating, at least no holes or pits were dug anywhere on the plain from which to take the earth for the mounds.

On the southwest side of the Beard mound I find large quantities of the dark earth which I have called "kitchen refuse." This is made up of blackened soil, ashes, charcoal, bits of bones some burned and some not, fresh-water shells, among which are several species of the *Unionidæ* and sometimes land snails, the *Helices*, bits of broken pottery and of broken flints, and small stones generally burnt, such as might be in fires built on the ground. This refuse was gathered from near their dwellings which were doubtless

not far off. It was removed from the vicinity of the dwellings, possibly because it was in the way there, but more probably because it was a convenient material to throw upon the growing mound-heap. The quantity of this refuse would indicate a considerable population. But conceding this, I am nevertheless led to believe

Fig. 2.



CELT OF GREENSTONE, BEARD'S MOUND. $\frac{1}{2}$ Nat. size.
Museum No. 8958.

that the large Beard mound was a long time in building, for we find at many different levels, the proof that grasses and other vegetation grew rankly upon the earth heap and were buried by the dirt. This is more often noticed near the base of the mound where the area to be covered was so large. Whether in the summer the grasses, etc., grew over a part of the area while work was going on elsewhere, or the work was intermitted altogether for longer or shorter periods of time it may be difficult to determine. But I am confident that many years elapsed between the commencement and completion of this mound. It may have been the work of several generations of men. The explorations did not reach the centre of the mound and nothing was found to show why it was built, although the method of construction is apparent.

I found a polished green stone wedge-shaped implement (Fig. 2)

near one side of the mound a few feet beneath the surface. It had evidently been accidentally dropped, and subsequently buried. This mound deserves additional exploration. The centre can best be reached by a tunnel or drift way. The "kitchen refuse" should receive a much more careful search than I have been able to give it, for from it much might be learned of the domestic life of the people.

The George Connett Mound.—No. 7 on the map. This is a low mound about 6 feet high, with a broad base, perhaps 40 feet in diameter. It has for years been plowed over and its original height has been considerably reduced. My attention was drawn to this mound by the burnt clay upon its top, and Mr. Connett cheerfully consented to my exploring it. A trench 5 feet wide was dug through the centre. On the east side much burnt yellow clay was found, while on the west end of the trench considerable black earth appeared, which I took to be kitchen refuse. About 5 feet below the top we came upon large quantities of charcoal, especially on the western side. Underneath the charcoal was found a skeleton with the head to the east. The body had evidently been enclosed in some wooden structure. First there was a platform of wood placed upon the ground, on the original level of the plain. On this wooden floor timbers or logs were placed on each side of the body longitudinally, and over these timbers there were laid other pieces of wood forming an enclosed box or coffin. A part of this wood was only charred, the rest was burnt to ashes. The middle part of the body was in the hottest fire and many of the vertebræ, ribs and other bones were burnt to a black cinder and at this point the enclosing timbers were burnt to ashes. The timbers enclosing the lower extremities were only charred.

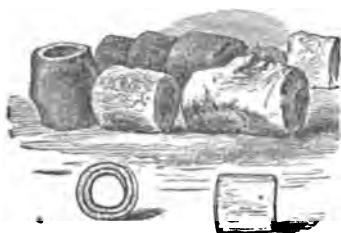
I am led to think that before any fire was kindled, a layer of dirt was thrown over the wooden structure, making a sort of burial. On this dirt a fire was built, but by some misplacement of the dirt, the fire reached the timbers below, and at such points as the air could penetrate there was an active combustion, but at others where the dirt still remained there was only a smothered fire like that in a charcoal pit. It is difficult to explain the existence of the charred timbers in any other way. There must have been other fires than that immediately around and above the body, and many of them, because, on one side of the mound, the clay is burned even to the top of the mound. In one place three feet

above the body the clay is vitrified. It is possible that fires were built at different levels—open fires,—and that most of the ashes were blown away by the winds which often sweep over the plain. I have stated that there was first laid down a sort of floor of wood on which the body was placed. On the same floor were placed about 500 copper beads forming a line almost around the body. Of course the string (in another mound in the neighborhood copper beads were found strung on a buckskin string) was burned and the beads were more or less separated by the movement of the timbers and earth. Sometimes several were found in contact in proper order.

Several beads were completely rusted away. Where the timbers were not burned to ashes but only charred, the beads were found lying upon the lowest layer of charred wood with another layer resting upon them. From the small diameter of the concentric or growth rings in the charcoal in the bottom layer, I infer that there was nothing more elaborate than a platform of *poles* for the resting place of the body. Where the wood was burned to ashes the beads were found in the ashes.

The beads (Fig. 3) were made of narrow strips of copper rolled together in the form of a tube.

Fig. 3.



COPPER BEADS, GEO. CONNETT'S MOUND.
Natural size. Museum No. 8992.

They are not welded but were rolled up when cold. Two or three were warped and unrolled by the heat to which they had been subjected. The copper beads found in the School-house mound on the same plain were oval, a much more difficult form to make (see fig. 6). The distribution of the beads in the Geo. Connett mound leads to

the supposition that they were not worn upon the person of the one buried (except perhaps a few found near the neck), but were deposited as the property of the man. When we remember that the copper of the moundbuilders was obtained from the veins of native copper near Lake Superior (a long way off from Southern Ohio), where it was quarried in the most laborious manner; that it was hammered into thin sheets and divided into narrow strips by no better smith's tools, so far as we know, than such as could be

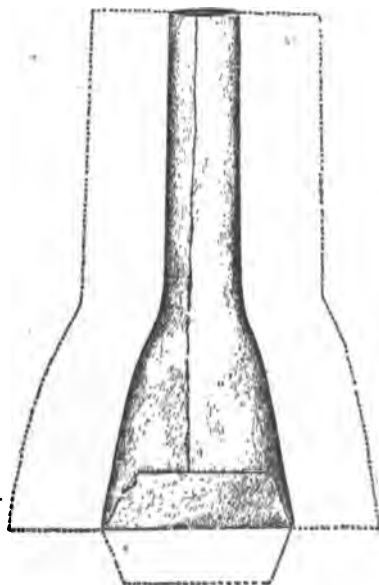
made of stone, and then rolled into beads, it is evident that the aggregate amount of labor involved in the fabrication of the beads in this mound would give them an immense value.

The shell beads of which there were perhaps fifty, are handsomely made of some thick shell. They are of different sizes and form, some being as large as a hazel-nut and oval in form, others a mere flat disc like a joint of a crinoidal stem. The holes are smoothly bored, and in the larger beads the drilling was from each side. This is seen very distinctly where the beads are broken. When smaller, the holes have a regular taper from one side to the other.²

The most interesting of the relics found in this mound is an instrument of copper (Fig. 4), found lying among the ashes and burnt bones of the middle of the body, where it had been subjected to great heat. It has the general appearance of a caulker's chisel. It is cylindrical at one end and flattened at the other. It is hollow throughout, with a hole in the flattened end. Length, 141^{mm}; width at flattened end, 52^{mm}; diameter of the cylindrical part, 20^{mm}. It was made from a single piece of copper, the outline of which is indicated in the figure. The copper was hammered out into so smooth and even a sheet that no traces of the hammer are visible. It would be taken indeed for rolled sheet-copper.

The edges are brought together and united very closely by a slight overlap. It has the appearance of being welded but it probably is not, the welding of copper in our day being a difficult matter. The implement taken altogether is a remarkable sample of smith's work. Many a village blacksmith of our time could not take a

Fig. 4.



INSTRUMENT OF COPPER, GEO. CONNETT'S MOUND. $\frac{1}{4}$ Nat. size. Mus. No. 8903.

²See figure and description of similar beads from a mound in Virginia on p. 85.—F. W. P.

lump of metallic copper and fashion a tool as symmetrical and perfect. He would utterly despair if he had no better shop and tools to work with than had the moundbuilder artisan. As to the use to which the instrument was applied, I am unable to form any worthy conjecture.

Neither flint arrows, nor stone implements of any kind were found in the mound.

Some of the bones are pretty well preserved. The skull was crushed and broken. It was evidently brittle from the effects of the heat, and the fragments show a sharp angular fracture like broken porcelain. The absorption by the bones of fatty animal matter at the time the body was subjected to so great heat, doubtless contributed to their preservation. *The skeleton undoubtedly belonged to a veritable moundbuilder.*

Woodruff Connett's Mounds. Nos. 3, 4, and 5 of map. There are three mounds on the farm of Mr. Woodruff Connett on the north part of the plain. They are quite near each other and are not very far from the two mounds of Mr. Geo. Connett (Nos. 6 and 7). Mound No. 3 is a very low mound and has been long plowed over. Mr. W. Connett reports that many years since he plowed up two skeletons, with one of which he found copper beads. The skeletons were on opposite sides of the mound not very far from the margin, lying with their heads to the north. Mr. C. reports that subsequently a party from Athens dug into this mound, near its centre, and found ashes and burnt clay but nothing else of interest. I doubt whether the exploration was thorough. I hope at some future time to reëxamine this mound. It is quite possible that the skeletons plowed up by Mr. C. were those of Indians, and the original place of the burial of the moundbuilder has not yet been discovered. Mr. Connett's large mound No. 5, has never been opened. It is, I think, one of great promise.

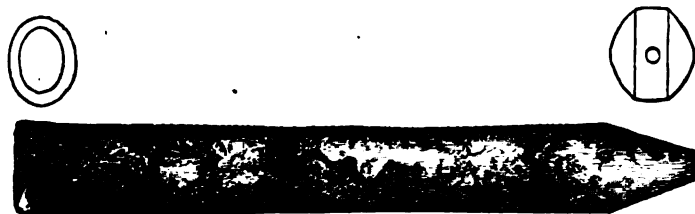
With the kind permission of Mr. Connett, a pretty careful examination of the mound No. 4 was made by means of a trench. The mound is a little more than 6 feet high with a base of perhaps 40 feet diameter.

Nothing was found for 5 feet from the surface except the natural dirt of the plain generally homogeneous with occasional small deposits or baskets full of black earth which I call "kitchen refuse." About 6 feet down and on or very near the original surface of the plain, I found ashes, charcoal, bones, etc. The bones were considerably scattered over a space of from 8 to 10 feet.

There was evidently some sort of wooden structure of timbers placed longitudinally east and west. Most of this was burnt, but on the west side pretty large pieces of charcoal, or more properly charred wood, showed that the fire was less complete in that direction. In this direction the bones were found baked rather than burnt. The few ribs and a humerus found on the extreme east were not burnt. If they belonged to the same body, they had fallen or been thrown by the displacement of the timbers to the east, and were found lying in a depression of the bottom.

How the bones became so scattered it is difficult to conjecture, if they belonged to a single body. It is possible that they were in part scattered by the falling in of the timbers, but more probably by the rude stirring of the fires by those who had charge of the cremation. The bones were evidently not burned before burial, as I have found the case in some other mounds. Many of the bones were well preserved, having apparently in the baking process absorbed much animal fat. The skull was broken in by the weight of the superincumbent mass, the baking having rendered it brittle,

Fig. 5.

TUBE OF CLAY, W. CONNETT'S MOUND. $\frac{1}{4}$ Nat. size. Mus. No. 8985.

but, as in the case of the skull in the Geo. Connett mound, the fracture was sharp and distinct like that of broken porcelain. I have never seen any bones of *undoubted moundbuilders* so perfectly preserved as those in this and in the Geo. Connett mound.

No beads of any kind were found and no stone implements. The pottery "whistle" (Fig. 5) was the only thing found with the bones. This is a cylinder of soft yellow clay, but slightly baked, if at all. One end is closed except a small circular opening. It is 186^{mm} long and 23^{mm} in diameter.

The Zenner Meadow Mound. This mound is No. 13 on the map. It is a large flat mound 8 to 9 feet high with a diameter of base of

80 feet. It is a little south of a large circle or fort, marked No. 12 on map. The mound was a very wet one and thorough trenching was not attempted; instead, a pit 12×5 feet was sunk exactly in the centre. It should be here stated that Mr. Zenner, a merchant of Athens, generously consented to our opening any of his mounds. No burnt earth was found. Near the top there was considerable "kitchen refuse." On the bottom or on the original surface we found ashes and in connection with the ashes burnt human bones. They had evidently been burned before burial, and had been gathered in miscellaneous confusion, and placed in a narrow space 5 or 6 inches wide and from 2 to 3 feet long. The ashes were doubtless brought with them, at least there appeared to be no evidences of a local fire in the reddening or hardening of the clay or in remnants of charcoal. No traces of beads or implements.

The Zenner Large Mound. This mound is one of a group of three mounds and four circles or "forts" numbered, on the map, 21, 22, 23 (mounds) and 16, 17, 18, 19 (circles). The Large Mound (21) is 14 feet 8 inches high, with a base of 50 to 60 feet in diameter. On the east side, two-thirds of the way to the top, we found a depression showing former digging, and there is a tradition that the mound was opened many years ago and stone pipes found. From the surface appearance we inferred that the former excavation had not reached the bottom of the mound, and we concluded to trench it. Much labor was expended on it, unfortunately with negative results. Ashes in considerable quantity was found on the bottom near the middle and in the earth a little above we found a jaw and some bones of a small animal. On the bottom on the line of the ashes we worked under the walls as far as we could, but found nothing. On the east side we came into the old excavation, which had evidently reached the bottom not very far from the middle of the mound. Considerable "kitchen refuse" was found, but less than in the Beard Mound. The mound is very dry and well preserved, human bones were expected but none were found. It caved in on the side weakened by the old excavation the night after we had completed the trench, and we gave up further search.

Near the large mound are two small ones (Nos. 22 and 23 of map) through each of which trenches were dug, but nothing of value found. In one of them there was much "kitchen refuse."

These three Zenner Mounds, being close by four forts or circles,

were supposed to be very promising ones, and it is to me a little strange that nothing should have been found in any of them.

Two other mounds (Nos. 24 and 25 of map) on Mr. Zenner's farm were opened with no better results. No. 25 is a very small mound in the woods. No. 24 is about 8 feet high. It proved very wet and troublesome to dig. Ashes were found at the bottom but nothing else. I think a very few traces of bones were noticed, but the mound is a poor one for the preservation of bones.

The School-house Mound.—No. 10 of map. This mound was originally a pretty high one (probably not less than 18 feet in

Fig. 8.



FRAGMENT OF LEATHER DRESS WITH COPPER BEADS, SCHOOL-HOUSE MOUND.
Natural size. Mus. No. 8915.

height) before the top of it was removed to secure an elevated site for a district school-house. The work was done in the fall of 1875

and the house built in time for the winter school. The mound was ploughed and scraped and the dirt placed in the street.

There was considerable "kitchen refuse." Neither bones nor stone implements were noticed, but the lower 4 feet of the mound were not removed. At a point near the northwestern corner of the school-house, and perhaps 15 feet from the centre of the mound, there was plowed up, in extremely hard and dry dirt, a large piece of what I suppose to have been ornamented dress. It was according to report, 8 or 10 in. wide, and perhaps equally deep. It was covered with copper beads and so great was the desire of the many bystanders to obtain portions of it, that it was torn in pieces and distributed. It was found at a point probably 8 feet below the surface, estimated vertically, and 12 to 15 from the surface, estimated horizontally. It was in extremely hard dirt, which had never been disturbed, and the distance from the surface forbids the idea that it was of Indian origin. I am indebted to the kindness of Peter Martin, Esq., for a fragment of the curious relic, represented in figure 6. The beads were strung on a buckskin string and placed on four layers of the same skin. The skin is remarkably well preserved. It was probably never wet after it was placed in the mound. The fibre is so well preserved as to give the whole a slight degree of toughness. The beads were of a more elaborate character than those found in the Geo. Connett Mound, being oval in form. I regard this relic as a genuine one and belonging to the age of the moundbuilders. The exact place where it was ploughed up has been pointed out to me by several trustworthy persons who were present. It is much to be regretted that the bottom of this mound had not been explored before the erection of the school-house.

Judge Jewett's Mounds. A little east of Wolf Plain, on the ridge, are two mounds on the land of Judge Jewett, who consented to their being opened. They command good views. One overlooks the lower part of the plain and the other overlooks the valley of the Hocking River. These mounds are numbered 27 and 28 on the map.

No. 27, in the open pasture, is the larger mound, being 10 feet high, with diameter of base of 50 feet. This mound was trenched. Nothing was found in it. It proved to be very wet. On the west side, about 3 feet below the surface, was a large stone of sandrock measuring $24 \times 16 \times 8$. This is the first and only time we have found a stone of considerable size in an earth mound. It was examined for markings or inscriptions, but none were found. The

earth of the mound was quite homogeneous and no kitchen refuse was noticed. There were occasionally bits of charcoal, but no defined line of ashes. It was in all respects a very disappointing mound.

The other mound (No. 28) is in woods. It is 8 feet high with 40 feet diameter of base. There had formerly been a shallow excavation made in the top, about 3 feet deep. The lower 5 feet of the mound was largely composed of burnt earth red and black, but with a large preponderance of red. Small bits of charcoal were found but no large pieces and no proofs of any structure of timber. Near the bottom and mixed with the red burnt earth were human bones in small fragments, probably remnants of a body after cremation. They were scattered over an area of about 3 feet square. No defined line of ashes was found. No grave could be found below the original surface of the ground. No flint arrowheads nor implements of any kind were seen. The mound was only characterized by the large quantity of burnt earth found in it.

At the foot of the range of hills on the east and not far from the Hocking River, on a gravel terrace, are a circle and mound, quite near together. They are on the farm of Mr. Alanson Courtenay, who kindly permitted us to open the mound. The circle is rather a small one perhaps 60 feet in diameter. The mound is about 100 feet from the circle to the west and nearer the hill, and is 3 feet high and of 25 feet diameter of base. It has been considerably reduced by the plow. At or very near the bottom, a little northeast of the centre, was found a skeleton lying with the head to the west. The bones were badly decayed and only unsatisfactory fragments were obtained. No traces of ashes or burnt earth were visible. Not far from this mound on the east, on the railroad, many skeletons were brought to light in making an excavation with a steam shovel. The bones were broken by the shovel and I have only heard of a single skull in tolerable preservation. With the skeletons was found an earthen pot holding about a quart. No sufficient investigation has been made as yet to determine whether the skeletons were those of Indians or of mound-builders. I had supposed them Indian bones.

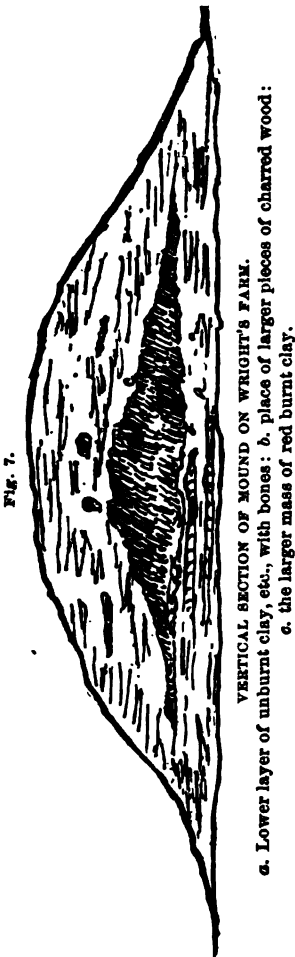
Hocking County. In company with Judge Silas H. Wright, I explored a mound on the Wright farm in Greene township, Hocking Co., about three and a half miles southeast of Logan. There were two mounds on the farm; one of these has recently been re-

moved and the other we opened. The first mentioned being in the barn-yard was in the way, and it is now altogether removed and a weighing scale has been constructed on its site. In preparing the scale pit, an excavation had been made to the original level of the ground. Near the original centre of the mound, and at the bottom of the scale pit a hole was dug 5 to 6 feet deep and in the bottom of this hole resting upon a gravel stratum, which there greatly facilitates the under drainage of the soil, was found a human skeleton. Many of the bones were in tolerable preservation and a considerable part of the skull was obtained. The body was buried at full length with the head to the north. The mound was originally about 10 feet high. These bones I obtained through the kindness of Mr. Wm. Wright, the brother of the Judge. No traces of burnt earth, ashes or charcoal were found in the mound. The bones of the skeleton had never been burned. It was exactly like a modern grave with an earth mound over it. The mound is not on one of the drift terraces, but on an alluvial terrace perhaps 30 to 35 feet above the Hocking River, and more than one-half a mile distant from it.

A few rods from the mound last mentioned and on the same low terrace is the other mound previously alluded to. It is from 9 to 10 feet high. A road had been graded along one side, causing the removal of perhaps one-quarter of the mound, and on the other side an excavation had been made for a sort of milk cellar. All the exposures showed much burnt earth or clay, of brick color, and borings with a post auger at different places also revealed much red earth.

A wide trench was dug through the mound from the road to the milk house. In the centre of the mound, perhaps 5 or 6 inches above the original level, with a layer of brown loam between, we found a large and mixed collection of bones, all burnt and in very small fragments. See a of section represented in figure 7. They rested above some ashes, a very thin layer, but were themselves embedded in a dark brown dirt. These bones were spread over a surface of perhaps 5 feet long and 2 feet wide. They evidently had been burned before burial in the mound. In the clay and dirt perhaps 3 inches above the layer of burnt bones, we found a part of the bones of a body which had been evidently buried without cremation. Unfortunately the bones were decayed past recovery, except a few fragments. The body lay with its head to the north

as in the other mound near by. No traces of fire could be detected either upon these bones or upon the brown earth connected with them. Above the stratum of brown earth, which was from



4 to 6 inches thick, we found a thin layer of earth black with charcoal, perhaps 2 inches thick. Above this layer was another of a brown loam, slightly reddish, as if it had felt the fire somewhat. Above this reddish brown loam was a horizon of charred wood, although the wood was gone in places, while in others it was 6 inches thick. There were indications of pretty large timbers or logs forming a structure something like a "cob-house" of children, or a rail corn-crib of the western farmers. These timbers were in places only charred, and the charred ends were preserved. The direction in which the charred wood lay was for the most part from north to south. The unburned body also lay in the same direction. Over the charred wood horizon was red burnt earth and clay. The amount of this burnt clay was very great. Directly over the buried body it was nearly 3 feet thick, and elsewhere it was from 1 to 2 feet in thickness. Some of it is hard almost like brick and of a bright brick red. Much of it although equally burnt was not compacted, but was soft and flowing like kiln-dried sand, or like Indian meal. Sometimes we found some

black burnt earth, very compact and hard. Why it remained black, retaining apparently much carbonaceous matter, I cannot explain, unless possibly the heat was not sufficiently intense. This black earth was evidently kitchen refuse. No fragments of charcoal were found in the heavy mass of red burned earth extending

over the centre of the mound. How such a large mass of clay could be burnt by a fire on the top, I cannot understand, and it is more difficult to suppose that the comparatively small fire on the line of the charred wood (*b*) under the clay could have oxydized the iron in such a large mass of earth. In the burning on the level of *b*, the fire must in part have been a smothered one, producing as it did charred wood. Could this burnt clay have been burned elsewhere and afterwards brought as a *sacred* earth and placed over the buried bones? In favor of this supposition is the fact that we occasionally found isolated lumps and small deposits of the same burnt clay in higher portions of the mound. These were apparently brought as burnt clay and were not burned on the spot.

In the brown unburnt clay over the bones were some pieces of vessels made of steatite, or soapstone. This is the first time I have found this material. No stone of this kind is found nearer than eastern Pennsylvania and Maryland. One of the names of this mineral is *potstone*. It appears that the ancient mound-builders had learned its value. In the fields between this mound and the Hocking River I found abundant fragments of pottery of the usual texture, but I found no fragments of soapstone ware.

The mound had, scattered through it, a large number of fragments of flint and occasionally a finished arrowhead. These had either been dropped in the earth of the mound while in progress of its construction, or were already in the earth when it was gathered up from the surface of the ground.

Two miles and a half below the Wright mounds are two others in the rich valley. They have never been opened. On the hills to the west and southwest of the Wright farm are four mounds, one of earth and three of stone. The earth mound is peculiar in shape, being apparently two mounds united. The height of the larger mound is from 9 to 10 feet. The diameter of the chief mound is 45 feet, while that through the two is 65 feet. This mound has never been opened. It is on a ridge directly overlooking the valley of the Hocking, on a farm belonging to the heirs of Aaron Young, in Greene township, Hocking Co.

The three stone mounds are on the same ridge but further south. One of these is on the land of J. D. Longstreth, Greene township, Hocking Co. It is 5 feet high with a base of 48 feet diameter, composed of large angular stones of coarse sandrock from the lower portion of the coal-measures. Heavy bodies of this sandrock are

found in these hills. This mound was formerly opened and there is a circular pit in the centre, roughly walled up like a well. Whether anything was found I could not learn. I do not think the pit went below the surface of the earth.

The other two stone mounds are about a quarter of a mile from the one just mentioned, and are on the land of Christopher Kreitz in the same township. They are only 16 feet apart. The larger one is 10 feet high with a base of 60 feet diameter. The smaller one is 6 feet high and 54 feet in diameter of base.

The smaller one was once opened by a pit in the centre. This opening disclosed the fact that the mound was composed of about one-half dirt and one-half stones. No mixture of earth was seen in the larger mound. The report is that nothing was found in the opened mound. The stones are large and angular and were evidently brought from the adjacent fields. The very largest would probably weigh 200 lbs. The average weight would be perhaps from 40 to 50 lbs.

It is difficult to explain these mounds unless we consider them simply burial mounds. The stones show no oxydation or reddening as if signal fires had been built upon them, and indeed, they are not well located as signal points or as points of outlook. My impression is that the people who built them found the stones abundant on the ridge, and thought it easier to construct the mounds of them than of the clayey earth. If the land on the ridge was cultivated, the removal of the stones from the surface would be an agricultural improvement.

Woodruff Connett's large mound, Dover, Athens Co., Ohio.—This mound is one of many found on the Plain in Dover and Athens townships, Athens County, Ohio. It is on the farm of Mr. Woodruff Connett, and is quite near a small mound which we were kindly permitted by Mr. C. to open last winter, and of which a detailed report is given on page 62.

This large mound is by estimate from 16 to 18 feet high, with a diameter of base of about 85 feet.

The exploration consisted of driving a tunnel about 4 feet wide and 4 feet high to a point beyond the centre. We found the dirt sufficiently firm and no timbering was needed. The tunnel followed the level of the original surface of the ground. At no point had the original soil been disturbed by excavations. The structure of the dirt pile was found to be as in other mounds.

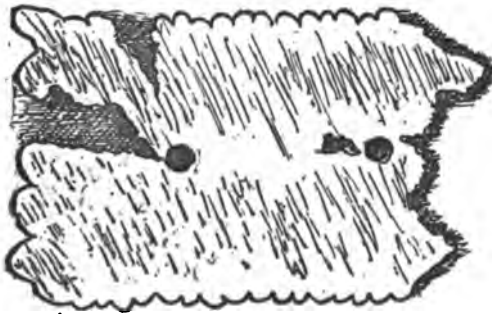
The pile grew by the addition of small loads, or baskets full, and the separate loads may be distinguished. No kitchen refuse was observed as in the Beard Mound.

At the centre of the mound, on the original surface of the ground, we found a small pile of ashes, burnt human bones, etc. The pile was nearly circular in outline, its diameters being about 2 feet and 2½ feet, and the depth in the centre was from 3 to 4 inches.

Under this pile of ashes and bones there were no traces of fire and the ground had not been burned. The earth above the bones was also in its natural or unburnt state. It was evident that no burning of a body could have taken place there. About 15 inches over the bones last named was another small collection of burnt human bones, a carefully prepared pocket of them enclosed in bark. This deposit was from 12 to 15 inches in length by 6 inches in width. The bones were free from ashes and had been picked up and carefully placed in the growing mound. No implements of any kind were found with the upper bones.

In the lower pile of ashes and bones were found two plates of copper and a stone tube. They had been burnt with the body and

Fig. 8.



COPPER ORNAMENT, W. CONNETT'S MOUND.
Nat. size. Museum No. 11017.

Fig. 9.



COPPER ORNAMENT,
W. CONNETT'S MOUND.
Natural size.
Museum No. 11016.

were buried with it. One of the copper plates was much corroded and a part of it had disappeared, but the outline of the original form can be easily inferred from the figure. It is a flat thin plate with serrated edges, and with two holes about an inch from each end, respectively. It is represented in figure 8 of natural size, as it now exists. The other (Fig. 9) is a thin plate of copper about 65^{mm} long by 28^{mm} wide, curved, with the ends brought

nearly together, and four small holes at the corners, evidently for the insertion of strings. It is too small for a wristlet, but might have been an ornamental band for the hair.

Perhaps the most interesting thing found is a stone tube, about 180^{mm} long and 27^{mm} in diameter at one end, and 33^{mm} at the other. It is evidently modeled after the copper tube found in a mound in the adjacent field of Mr. George Connett. Like the copper ornaments previously described, it passed through the fire and the flattened end was cracked off by the heat leaving the implement imperfect. The material appears not to be pottery,

Fig. 10.



TUBE OF STONE, W. CONNETT'S MOUND. $\frac{1}{2}$ Nat. size. Mus. No. 11018.

but a kind of oölitic limestone. In this I may be mistaken. The form is remarkably regular and graceful, and the surface is very highly polished. It is the best piece of work of this kind I have ever seen taken from our mounds.³

This mound is of much interest and of great scientific value, because by it we prove that the moundbuilders sometimes practised cremation. The lower pile of bones was brought there with the burnt ornaments, etc., and with more or less of the ashes of the fire. The bones were in the confusion to be expected from being gathered up and thrown into a small pile. The abundant ashes would imply that they were not brought far. On the other hand, the upper deposit of bones contained no ashes and these bones might have been brought from a distance where the cremation

³ These tubes of stone, clay and copper discovered by Prof. Andrews, approach so near to the long tube-like pipes made of stone and still used by the Utes, that I can hardly refrain from classing them with pipes. The principal difference consists in these tubes having what would be the mouth-piece made by the termination of the pipe itself, while in the stone tubes that are unquestionably pipes the mouth-piece is probably made by inserting a hollow bone or a reed. These tube-like pipes have been found in number in the old burial places of California, and there has recently been one received at the Museum, which was collected in Massachusetts. Dr. Abbott has also found fragments of similar pipes in New Jersey. In Squier and Davis' "Ancient Monuments of the Mississippi Valley" several of these stone tubes are described, one of them identical with figure 5 of this article, and the authors of that work also suggest that these tubes may be pipes.—F. W. P.

took place. As before stated, these bodies could not have been burned within the mound, for there are no traces of fire near either deposit of bones. To one familiar with these explorations the traces of fire in mounds are apparent enough. I have reported other cases of the burial in mounds of bones already burned, besides some interesting ones in which the body was laid in a wooden structure, which afterwards took fire, by which a part of the body was burned. The latter was an accidental burning, but in the mound in question the bones were burned before burial.

I may add that I am much pleased with the method of tunneling adopted in the exploration of this mound. It is a capital way where you wish to leave the mound in its original symmetry of form. My friend, Thomas Black, Esq., of New Lexington, who is familiar with mining and underground work, accompanied me to Dover and took charge of the tunneling. We found the method adopted by him perfectly safe without resort to timbering. I wish here to record my great obligations to Mr. Black.

REPORT

ON THE EXPLORATION OF A MOUND IN LEE COUNTY, VIRGINIA,
CONDUCTED FOR THE PEABODY MUSEUM.

BY LUCIEN CARR, *Assistant Curator.*

HAVING been enabled, through the appropriation made by the Trustees of the Peabody Museum, to avail of the permission given by Mr. Robert Ely, to open a mound situated on his farm, near Rose Hill, Lee County, Virginia, I have the honor to submit a report of the discoveries made during the course of that exploration, with some conclusions drawn from a comparison of the formation of that particular mound with the historical account, given by the early chroniclers, of the origin and use of such structures.

The mound in question—a truncated oval in shape—stands alone, on a gentle slope; and having been in cultivation for many years, the wear and tear of the plow and the gradual weathering away of the summit made it impossible to get at its exact measurements. A careful examination, however, showed it to be about three hundred feet in circumference at the base, and nineteen feet in height, as measured in the excavation or shaft, sunk through the centre. On the top there was a level space, oval in shape, the diameters being respectively about fifteen and forty feet. At a distance of eight to ten feet from the brow of the mound, on the slope, there were found, buried in the earth, the decaying stumps of a series of cedar posts which I was informed by Mr. Ely at one time completely encircled it. He also told me that at every plowing, he struck more or less of these posts; and on digging for them, some six or seven were found at different places, and in such order as showed that they had been placed in the earth at regular intervals and according to a definite plan. On the top, in the line of the greatest diameter and near the centre of the mound, another and a larger post or column, also of cedar, was found. The wood of these posts was much decayed, in many instances being but little more than dust, though we were fortunate enough, in one case, to secure a fragment in a very good state of preservation. The location and regularity of these posts and their

position with reference to the central column would seem to show that the summit of the mound had at one time been occupied by some sort of a building—possibly a rotunda or council chamber—as the ground-plan answers to the description of one which Bartram found in the town of Cowe, on the “Tanase” River, among the Cherokees,¹ the very people who formerly held all this section of country, and which that author thus describes :

“The Council or town-house is a large rotunda capable of accommodating several hundred people : it stands on the top of an ancient artificial mount of earth, of about twenty feet perpendicular, and the rotunda on the top of it being above thirty feet more, gives the whole fabric an elevation of about sixty feet from the common surface of the ground. But it may be proper to observe, that this mount on which the rotunda stands, is of a much antienter date than the building, and perhaps was raised for another purpose. The Cherokees themselves, are as ignorant as we are, by what people or for what purpose these artificial hills were raised ;

“The rotunda is constructed after the following manner, they first fix in the ground a circular range of posts or trunks of trees, about six feet high, at equal distances, which are notched at top, to receive into them, from one to another, a range of beams or wall plates ; within this is another circular order of very large and strong pillars, above twelve feet high, notched in like manner at top, to receive another range of wall plates, and within this is yet another or third range of stronger and higher pillars, but fewer in number, and standing at a greater distance from each other ; and lastly, in the centre stands a very strong pillar, which forms the pinnacle of the building, and to which the rafters centre at top ; these rafters are strengthened and bound together by cross-beams and laths, which sustain the roof or covering, which is a layer of bark neatly placed, and tight enough to exclude the rain, and sometimes they cast a thin superficies of earth over all. There is but one large door, which serves at the same time to admit light from without and the smoak to escape when a fire is kindled ; but as there is but a small fire kept, sufficient to give light at night, and that fed with dry small sound wood divested of its bark, there is but little smoak ; all around the inside of the building, betwixt

¹ The Cumberland Mountain may be considered as having been their boundary on the North.” Arch. Amer., Vol. II, p. 90.

the second range of pillars and the wall, is a range of cabins or sophas, consisting of two or three steps, one above or behind the other, in theatrical order, where the assembly sit or lean down; these sophas are covered with matts or carpets, very curiously made of thin splints of Ash or Oak, woven or platted together; near the great pillar in the centre the fire is kindled for light, near which the musicians seat themselves, and round about this the performers exhibit their dances and other shews at public festivals, which happen almost every night throughout the year."²

As the size of the mound made its removal out of the question with the time and means at my command, it was determined to sink a shaft, six feet by four, through its present centre, and at the same time to carry along a side excavation, four feet wide, extending from the centre to the circumference. This would not only expose an additional section of the mound, but it would also give us a platform or rest on which to throw the earth taken from the central excavation. This earth was found to be composed almost entirely of loam, homogeneous in character, and similar to that found on the surface of the surrounding field; and as it was very mellow and friable we were able to make good headway in our digging. About 4 P.M. of the first day, at a depth of ten feet, the laborers in the central shaft announced that they had found human remains, and Mr. Charles B. Johnson, of Gibson's Station, Va., immediately descended into the shaft and began in person the work of disinterment. These remains were subsequently found to belong to two children, but as they had been evidently buried together in one grave, we shall for the present classify them as grave No. 1. In a few moments the announcement was made of a similar "find," No. 2, in the side excavation at a depth of six feet from the surface. To this point Prof. Lucius H. Cheney of Cape Girardeau, Missouri, a student in the Harvard Summer School of Geology, at once repaired, and as he had had some experience in opening mounds in the south-eastern portion of his own state he was placed in charge of the excavation. The remains at each place were found to be in such a state of decay that it required the utmost care to extricate them from their earthen mould. To one who has had experience in this delicate work it is needless to say that the spade and shovel have to be

²Bartram's Travels through North and South Carolina, Georgia, etc., etc., etc., page 87, et seq., Philadelphia, 1791.

discarded, and that prone upon the ground the conscientious workman must be content to pick out the bones one by one, or as is far more frequently the case, piece by piece, with a pocket knife or some other instrument of equal delicacy.

Whilst lying in this unprotected attitude, and just as Prof. Cheney had declared with great earnestness his belief in the possibility of saving the entire skeleton, a sudden rush of spectators to the brink of the side excavation, to see what was going on, caused a section at the top of the wall, along its entire length, to give way and fall upon those who were at work below. Prof. Cheney and Mr. Johnson were completely buried by the falling earth; one or two others were caught, and although not entirely covered up, yet they were held fast until relieved by outside assistance. All hands at once sprung to the rescue of our imperilled comrades, and in about twenty minutes, the lifeless body of Prof. Cheney was reached. Every effort, guided by the advice of a neighboring physician, was made to resuscitate him, but in vain. The mass of earth had fallen on his neck and the back of his head, and the blow had doubtlessly caused instant death. Mr. Johnson, who was at work in the central shaft, was buried some four feet deeper, and was not reached until five or ten minutes later. He was severely bruised but fortunately suffered no other injury from his painful and dangerous imprisonment. This sad accident of course put an end to our work for the time being; and it was not until the next week, after the last sad offices had been paid to our friend, that Mr. Johnson, in nowise daunted by his narrow escape, returned with me to the mound for the purpose of finishing the excavation, at least, to the extent of the original plan. This was done after two days more of steady digging, during the course of which the central shaft and side excavation were carried down to the original soil at the bottom of the mound, on a level with the surrounding earth, and the walls were sloped back after the fashion of a railroad cut. This method of proceeding opened up a much larger portion of the mound, and we felt ourselves amply repaid for the extra labor by the discovery of another skeleton No. 3, lying in the side excavation near the angle formed by its junction with the central shaft and only four feet from the surface. This closes the list of our discoveries of human remains as nothing of importance was found at or near the bottom of the mound. In fact all of our "finds" were made in the first ten feet

—the upper half as it were—of the excavation. It must not be supposed, however, that our researches have by any means exhausted the treasures of the mound, or that human remains may not hereafter be found even nearer the centre than those discovered by us. At the outside not more than one-sixth of the entire volume of the mound was removed, and as that was found to be unusually rich, as mounds go, it is but fair to assume that the remaining five-sixths will prove equally remunerative to some future explorer. But whilst freely conceding this point, it is important to bear in mind that below the level where the two children were lying, in the whole of the nine or ten feet through which we had to go in order to reach the bottom, nothing at all of importance was found in either the central shaft, or the side excavation. Here and there a piece of charcoal was turned over by the spade, and in one instance a thin layer—in fact a mere line—of ashes and burned earth, of small superficial extent, was passed through; but with these exceptions nothing else was found that could throw any light upon the customs of the people who built the mound, or the purpose for which it was erected, unless, perhaps, the absence of any vestige of interment at its present centre, on a level with or even a little below the surface of the original earth, should be taken as an indication that this was not a typical burial mound; i. e., that it was not thrown up as a memorial over the dead. Yet even this statement must be accepted with many grains of allowance for the reason, that the *present* centre of the mound may not correspond with its original position. A tree suffered to stand upon the slope, after the rest of the mound had been cleared, as was the case here, would undoubtedly retard the process of weathering in that particular quarter, and so in the long lapse of years the relative position of the centre might be materially altered. It is not believed, however, that any such change has taken place in this instance. The present contour of the summit of the mound, corresponding, as it does, with the circle of cedar posts, and the position of each with reference to the central column, of which Bartram speaks, would seem to indicate that there has been little or no change in the relative shape of the mound since it was last occupied, and hence partially sustain our negative conclusion as to its origin and use.

But whilst, as we have seen, the lower half of the mound was characterized by the almost total absence of all evidences of human

occupation, the upper portion, composed of the same kind of earth, contained more or less of all the articles that are usually found about an Indian Encampment. Besides the graves and their contents, there were found scattered about everywhere, throughout the whole of the upper half of the excavation, in different places and at various depths, beds of ashes, burnt earth and charcoal—usually cedar or chestnut—sometimes one above and overlapping the other, with an intervening stratum of earth of greater or less thickness. Some of these “hearths” were of large size and the layer of ashes was several inches in thickness. Animal and bird bones too were found, those of the crane, turtle, deer, elk, caribou, wolf, fisher and black bear being among them.³ Some of these had been broken after the fashion usual among savages, some had evidently been subjected to the action of fire whilst others still were without any marks whatever. Arrowheads, some of exquisite form and finish; small disks of stone, pottery and hematite; shells of *Melania*, converted into beads by grinding off the spine; a quantity of Indian corn and fragments of the cob with the grain still in place, all very much charred;⁴ implements of horn, and numerous fragments of the common coarse pottery such as was used by the modern Indians, were found scattered promiscuously throughout the mass, seemingly just where they had been lost or thrown by the savage who had last used them, and evidently without any special reference to the dead bodies buried in their midst. Of these, those numbered 2 and 3, and found, the former on the slope of the mound, six feet from the surface, and the latter also on the slope and four feet from the surface, occupied separate graves and belong to the class called “intrusive” burials, i. e., burials made after the mound was erected. The two children, found together, somewhat nearer the centre than either of the other two and about half way between the top and bottom of the mound, also occupied a separate grave and probably belonged to the same class of burials. Nowhere was there seen any evidence of a

³ I am indebted to Mr. J. A. Allen, of Cambridge, for identifying these bones, and he also informs me that this is farther south than bones of the Caribou have hitherto been found.

⁴ The charred corn was found subsequently to the date of my exploration, and was kindly sent to me by Mr. Wm. P. Bales and the Rev. S. B. Campbell of Rose Hill, Va. The latter gentleman writes me that it was found by drifting into the face of the southern wall of the central shaft about fifteen inches, and “on a level with the bottom of that shaft as it was on the day the mound caved in,” i. e., about ten feet from the surface, or in the upper half of the mound.

common or tribal burial, such as took place among some of the Southern Indians, when all the remains of the dead of a village were collected together, at regular intervals, and buried beneath a general mound ;⁵ but each grave was separate and distinct, as would probably have been the case if the interments had been made singly and at different times. Indeed, it is hardly possible that they could have been made at the same time, as the bones were found to be in about the same stages of preservation. Those of the children, which under ordinary circumstances, all things being equal, should have been the first to decay, were as well preserved as those of the warrior found in No. 3, and therefore presumably of later burial. These evidences of occupation, by the living as well as the dead, found at different levels, but always in the upper part, taken in connection with the absence, below a certain plane, not only of all traces, structural or otherwise, of a central interment either communal or single, but of almost all articles of human workmanship of every kind whatsoever, point unmistakably to the conclusion that this mound was originally thrown up as a place of residence and that it had been occupied as such, at different times, through a long series of years, anterior to and down to the period when its summit was crowned by some building, which may have been the rotunda or council chamber of the village. Under no other conditions does it seem possible to account for the fact that all the articles, with the exceptions named above, showing evidences of human occupation, were confined to one portion of the mound and that the upper. That this conclusion is not without a basis of historic probability is shown by the testimony of Garcillasso de la Vega⁶ who, speaking of "the town and house of the Cacique Ossachile" which he says "is like those of all the other chiefs in Florida," gives a description of the Indians' mode of building a town which may be translated as follows: "They themselves" (the Indians) "build up high places in this manner. They choose a spot to which they bring a quantity of earth, which they throw up into a sort of platform two or three pike's length in height, and of which the top is capable of holding ten or twelve, fifteen or twenty houses to lodge the Cacique with his family and all his suite. Afterwards, at the foot of this elevation they lay out a square, proportionate to the size (*conforme à l'étendue*) they

⁵ Bartram's Travels, p. 517, Philadelphia, 1791.

⁶ Histoire de la conquete de Floride, etc., p. 136. A. la Haye, 1735.

wish to make their town, and around this the principal men build their dwellings. The common people build in the same manner and thus they surround the house of their chief." Elsewhere, in the town of "Guachoule," on the headwaters of the Coosa River⁷ and near the country of the "Achalaqué" (Cherokees) the house of the chief is represented as standing upon "a mound, with a terrace around it, where six men could walk abreast."⁸

Nor is this conclusion inconsistent with the fact that human remains were found buried here, since the recent Indians not unfrequently utilized these mounds as burial places just as the whites have done in later times. But testimony even more to the point is furnished on the authority of Bartram and Adair, from the former of whom we learn that several of the Southern Tribes were in the habit of burying their dead "in a four square deep pit under the cabin or couch which the deceased laid on, in his house"⁹ whilst the latter author speaking of the funeral customs as practised among the "Chickasah" and "Cheerake" Indians, gives a description of the burial of a chief belonging to the former tribe which conforms so exactly to the facts as developed in the course of these explorations, that after making due allowance for the ravages of decay and the difference in the character of the articles that would naturally have been buried with persons of different ages, sexes and occupations, it may be taken almost without modification as an account of the interment of the very people whose dried and withered remains we had exhumed. After mentioning, among other details of the ceremony, that they carried the body three times around the house in which it was to be buried, he says: "They laid the corpse in his tomb in a sitting position, with his face towards the east, . . . ; he was dressed in his finest apparel, having his gun and pouch, and trusty hickory bow, with a young panther's skin, full of arrows, along side of him, and every other useful thing he had been possessed of . . . His tomb was firm and clean inside. They covered it with thick logs, so as to bear several tiers of cypress-bark, and such a quantity of clay as would confine the putrid smell, and be on a level with the rest of the floor. They often sleep over those tombs, which with the loud wailings of the women at the dusk of the evening, and dawn of the day, on

⁷ History of Alabama by Albert James Picket, Vol. 1, p. 8. Charlestown, 1831.

⁸ Histoire de la conquete de Floride, etc., p. 294. A. la Haye, 1735.

⁹ Bartram's Travels, p. 515, Philadelphia, 1791.

benches close by the tombs, must awaken the memory of their relations very often : etc., etc.”¹⁰

In the graves opened by us the above account, with one or two trifling exceptions, was curiously verified : in fact the exceptions, inasmuch as they probably resulted from natural causes may be said to confirm the account. Thus, although the bodies had been doubled up and probably buried in a sitting posture, it was not possible to say in what direction they “faced ;” for the reason that the bones were found in a confused heap, just as they might have fallen when the ligaments, which held them in place, finally gave way. Nor were there any traces of the “bark lining,” or “the covering of logs ;” but this may well have been owing to decay. The fact that fragments of “logs” that had undoubtedly been used in the manner indicated were found by the officers of the Kentucky Geological Survey, in the central chamber or grave of a mound, situated on the Kentucky side of Cumberland Gap, leaves no room for doubting the accuracy of the early chronicler. But it is unnecessary to pursue this branch of the subject farther. The interments themselves, not less than the manner in which they were made, harmonize with the other evidences of occupation, and both are found to be in accord with the historical account of the origin and use of such elevations. In fact, within certain limits the chain is believed to be complete. Garcillasso asserts positively that in the time of De Soto the Florida Indians, among whom were the Achalaqué or Cherokees, did build such mounds, and in 1773, two hundred and thirty years later, Bartram found the Cherokees inhabiting substantially the same region that they did in the time of De Soto, and using one of these mounds as the site of the council chamber in their town of Cowe. Side by side with this historical résumé, if we arrange what may be called the “facts of the mound,” we shall find that the internal evidences of its occupation as a place of residence are conclusive ; that the mode in which the interments within it were made was similar to that practised at one time among the Cherokees ; that the circle or oval of cedar posts surrounding the top corresponds with the account given by Bartram of a council chamber built and in use by the same people, and if to this be added the fact that the mound stands on the headwaters of the Tennessee, formerly known as

¹⁰ History of the American Indians, p. 182, London, 1775.

"the river of the Cheraqui,"¹¹ and in a region of country that, so far as we know, was always held by them, it will be seen that a strong presumptive case is made out in favor of the known origin of this particular mound.

That the Cherokees, in the time of Bartram, were "ignorant by what people or for what purpose these artificial hills were raised," may well have been true, and yet not weaken the force of the argument. The recollection among savages of events that happened in past generations is admitted to be, at best, a very unsafe criterion; and as the Cherokees were among the first of the southern group of Indians that were brought into contact with the whites, it is probable that they lost the habit of building mounds at a very early day, just as in later times they abandoned some of their cherished customs connected with the burial of the dead.¹² The habit once discontinued, the memory of it would soon fade, even if their "wandering, unsettled disposition; their so frequently breaking up their old towns and settling new ones"¹³ had been better calculated than they were to strengthen and preserve the recollection of past events or the purity of their customs. These facts go far towards explaining the ignorance of the Indians, in Bartram's time, of what their ancestors may or may not have done fifty or a hundred years before; but even if the explanation should not be considered satisfactory, it will hardly justify us in offsetting the ignorance of a band of savages, of events in which their progenitors are supposed to have taken a part, against positive evidence of the fact. For these reasons, among others, it is not believed that this negative testimony is entitled to any weight when balanced in the scale against the historical evidence and the facts of the mound; nor can it, in any way, invalidate the conclusion that in this particular instance, it is not necessary to look beyond the historic epoch, or the Cherokee Indians, in order to find a mound-builder.

As to the precise age of this mound, or the date of the burials, nothing farther will probably ever be known. The evidence of the remains themselves is vague and uncertain, and there seems to be nothing else left on which to base a conjecture. At the time of our visit the mound was in cultivation, as it had been, "off and

¹¹ See Maps in Charlevoix, Du Pratz, Adair and others.

¹² History of Amer. Indians, p. 178. London, 1773.

¹³ Bartram's Travels, p. 301. Philadelphia, 1791.

on," for a quarter of a century or more. I was told by Mr. Ely that a "large" black walnut tree once stood upon its slope, but that it had been cut down many years ago to make way for the plow. Not a vestige of it remains, not even the roots. From only one point does there come a ray of light, very faint and uncertain it is true, and bearing upon the date of its abandonment rather than the time of its erection. The mound stands in Powell's valley, on the line of what is known as "Boone's path," and is probably near the route traversed by that adventurer when, in 1767, he first made his way through Cumberland Gap into what is now known as the State of Kentucky. As that beautiful valley soon became a thoroughfare, it is hardly probable that the mound was ever permanently occupied after that time.

The accounts quoted above of the manner of interring the dead, as practised among the southern Indians, leave but little to be added save in the way of a detailed description of the articles found in the different graves, all of which differed among themselves, as was to have been expected, with the age, sex, and occupation of the person with whom they were buried. Thus, in grave No. 1, containing the bodies of the two children, aged respectively about two and seven years, were found among other things the upper canine of a black bear, showing undoubted marks of fire, and two quarts of shell beads of different sizes and shapes, made chiefly

FIG. 1.



SHELL BEADS, ELY MOUND, VA.; Natural size. Museum No. 9737.

from the columellæ of the *Strombus gigas* and the *Busycon perversum*, though other shells were undoubtedly often used. The figures which are given above afford a very good idea of the different forms of the beads found, though they by no means represent the extremes in size. In this particular they range all the way from 1^{mm} to 18 in thickness, and from 2 to 16 in diameter; and even this does not reach the limit of similar beads, as there

are specimens in the Peabody Museum at Cambridge, obtained from mounds in this same section of country, more than double the size of the largest figured above. Many, perhaps a large percentage of these beads, and among them some of the smallest in size, show indisputable marks of having been drilled from opposite ends, thus confirming the observations of Professor Wyman; and in those cases in which the columella may have been bored in blocks and subsequently cut into pieces of the desired length, as the two grooved specimens seen in the background of the engraving would seem to indicate was sometimes done, there is evidence that each specimen was worked separately and the ends and sides ground down into the required sizes and shapes. This itself was not a small undertaking, and when we consider the extreme minuteness of many of the specimens, and the almost incredible numbers in which they are found it will readily be seen what a vast amount of patient labor, and what a high degree of skill and delicacy in manipulation were necessary to the production of these treasures of Indian art. Upon this point, not less than with regard to their general distribution and great value the early writers do not leave any room for doubt. From New England to Louisiana, and throughout the whole of the Ohio Valley they were everywhere found in more or less abundance, and were either worn as ornaments or used as money. As money it was known as *Wampum*, *Peak*, or *Roanoak*, and was as potent for good or evil then as now. "With it," according to the old chronicler, "you may buy skins, furs, slaves, or anything the *Indians* have; it being the Mammon (as our Money is to us) that entices and persuades them to do anything, and part with everything they possess, except their children for slaves . . . With this they buy off murders; and whatsoever a man may do that is ill, this *Wampum* will quit him of, and make him in their opinion good and virtuous, though never so black before." It was made of a "vast great shell ground on stones and other things smaller than the small end of a tobacco-pipe, or a large wheat-straw." The boring was done with a "nail stuck in a cane or reed and rolled continually on the thigh with the right hand, holding the bit of shell with the left."¹⁴ In earlier times implements of stone and perhaps others equally primitive were doubtlessly used. This "*Peak* was of two sorts, or rather of two colours, for both are

¹⁴ Lawson's History of Carolina, p. 194. London, 1718.

made of one Shell, though of different parts; one is a dark Purple Cylinder and the other a white much resembling the *English Buglas*, being one-third of an inch long and about a quarter in diameter. The dark colour is the dearest,"¹⁵ it being according to Lawson, of twice the value of the white. In view of this fact and of the general distribution of both sorts of beads, it is perhaps a little singular that in the whole of this collection which numbers many hundreds, there is not one colored specimen. In fact, during a somewhat lengthened experience in rummaging the mounds and caves in Kentucky and East Tennessee, it has never been my lot to find one made of purple shell, or indeed of any other colored material, except on two occasions when two beads of cannel coal were found, one in a cave on Station Creek, Claiborne County, Tennessee, and the other in Haunted Cave, Edmonson County, Kentucky.

There were also found two shell-pins, one of which, made from the columella of the *Busyon perversum*, is 51^{mm} in length and has

Fig. 2.



SHELL PIN, ELY
MOUND, VA. Nat.
size. Mus. No. 9738.

Fig. 3.



CARVED SHELL, ELY MOUND, VA. $\frac{1}{4}$ size. Mus. No. 9736.

a comparatively sharpened point, whilst the other is blunt, and measures 93^{mm} in length. In the latter the spiral groove is still

¹⁵ The History and Present State of Virginia, Book III, Chap. 12. London, 1705.

preserved. But the most interesting of the articles taken from this grave was an engraved shell made from the most dilated portion of the *Strombus gigas*, and carved on the convex side into the likeness of a human face. It measures 138^{mm} in length by 120 in breadth. It is perforated with three holes, "the two upper of which are surrounded with circles and represent eyes; between these is a raised ridge of shell in place of the nose, and below this is a third hole,"¹⁶ which is just above a series of lines that were probably intended as the mouth. Four lines parallel to each other during three-fourths of their length, begin at the outer corner of the eye and are zigzagged to the lower jaw, where they are drawn to a point. The concave side of the shell is perfectly plain and still preserves its high polish, though the right portion of the face on the carved or convex side shows the sad effects of time and exposure.

Ornaments of the above material and the same general style of workmanship are not uncommon, and are described with some exactness in the early writers. Lawson,¹⁷ says the Indians, "often-times make of this Shell a sort of Gorge, which they wear about their Neck in a string; so it hangs on their Collar, whereon sometimes is graven a Cross, or some odd sort of Figure, which comes next in their Fancy," and Beverly¹⁸ gives an engraving of an Indian in summer dress, of whom it is said: "At his Ear is hung a fine Shell with Pearl Drops. At his Breast is a Tablet or fine Shell, smooth as polished Marble, which sometimes also has etched on it, a Star, Half Moon, or other Figure, according to the maker's fancy. Upon his Neck and Wrists hang Strings of Beads, Peak, and Roenoke," and Adair,¹⁹ who, aside from his wild notions about the identity of the American Indians with the lost tribes of Israel is a trustworthy guide, says: "the American *Archi-magus*, wears a breast-plate, made of a white conch-shell, with two holes bored in the middle of it, through which he puts the ends of an otter-skin strap, and fastens a buck-horn white button to the outside of each." But it is useless to multiply quotations in order to give an idea of what can be much better understood by an examination of the engraving given above or of those which may be found

¹⁶ Fifth Annual Report of the Peabody Museum of American Archaeology and Ethnology, p. 16. Boston, 1872.

¹⁷ History of Carolina, p. 193.

¹⁸ The History and Present State of Virginia, Book III, p. 3.

¹⁹ Adair, History of the American Indians, p. 84. London, 1775.

in the work of Col. C. C. Jones, jr., on the Southern Indians. At page 502 of that work, by way of illustrating a most interesting chapter on shell ornaments, he has represented two of these gorgets. One of them is rather small and perfectly plain, whilst the other is somewhat larger and highly ornamented with lines and dots carved on the concave surface of the shell, which are to be "regarded rather as the expressions of the rude fancy of the workman, than as indications of any intelligent designs or pictographic idea."²⁰ In the Peabody Museum, there are several similarly carved shells, obtained from mounds in Eastern Tennessee. On some of these a rattlesnake is carved; others are almost fac-similes of the one here figured, whilst on others a still ruder attempt is made at representing the human face. In all of the specimens examined it is a peculiarity worthy of note, that the *convex* side of the shell is used when the human face is represented, whilst in other styles of ornamentation the figures are carved on the *concave* surface. These articles were all found mixed up with the bones, in close proximity to the crania.

By reference to the engravings it will be seen that many of the articles are in an imperfect condition. The lapse of years and exposure in shallow graves and moist earth have caused the decay of the polished surface of the shell, so that nothing remains but a soft white material something like chalk. Fortunately, however, there are enough left to show how they were made, and to justify by their beauty the high appreciation in which they were held, and the patient labor necessary to bring them to perfection.

These were all the articles saved from this grave, though there were others of the several different sorts, among them two more gorgets and several additional pins. Unfortunately, however, they were so extremely soft that many were lost in the mere act of picking them out, and the caving in of the wall before we had exhausted the contents of the grave, mashed all that were left into one indistinguishable, dough-like mass. These beads and pins do not differ, either in material or workmanship, from those found some years ago, in the same section of country, by the Rev. E. O. Dunning, and fully described by Professor Wyman in the Fifth Annual Report of the Museum. The shells of which they were made were all brought from the Gulf of Mexico or the Atlantic shores of the Southern States, and represented in those early days a value that cannot be too highly estimated.

²⁰ *Antiquities of the Southern Indians*, p. 516. New York, 1873.

The more important bones of these bodies, including the upper and lower jaws, having been dried and thoroughly saturated with

Fig. 4.



SPEAR POINT, QUARTZITE,
ELY MOUND, VA. Nat. size.
Museum No. 9742.

Fig. 5.



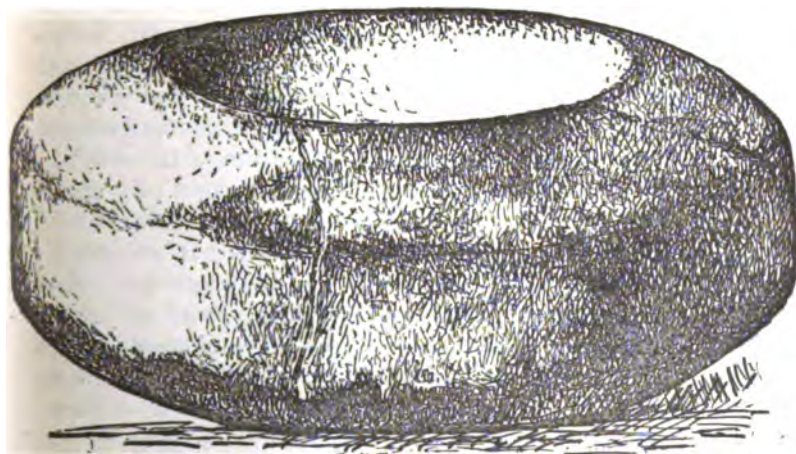
DAGGER, CHALCEDONY, ELY MOUND, VA.
Nat. size. Mus. No. 9743.

a weak preparation of glue, were found to be in a very good state of preservation, though the crania were unfortunately broken to

pieces at the time of the accident, and cannot be put together. There is nothing peculiar about any of them, and for aught that appears to the contrary, they might have belonged to any healthy white children of the same ages. It is, perhaps, a matter worthy of note, to find such a wealth of ornament buried with children, as it seems to show that the Indian mothers then, as now, did not hesitate to lavish upon their little ones all that they had that was rare and beautiful.

Grave No. 2 contained what is believed to have been the body of a woman. A few shell beads only were found with these remains, which were much decayed. The skull, catalogue Number 9,746, very much flattened from behind, was fortunately preserved and its measurements will be found elsewhere, tabulated with

Fig. 6.



"CHUNGKE STONE" OF SANDSTONE, ELY MOUND, VA. Nat. size. Mus. No. 9744.

those of other crania that have been received during the year. The humeri were perforated, but the tibiae showed no signs of flattening.

Grave No. 3 seems to have been the tomb of a warrior, as the remains indicated great muscular development. With them were buried a beautiful spear point of quartzite 129^{mm} in length including the tang and 52^{mm} in breadth; also a gracefully shaped lance head or dagger of chalcedony, 136^{mm} in length and 38^{mm} in breadth, and a polished bi-concave discoidal stone made of sandstone. This specimen is not exactly symmetrical, though prob-

ably as near it as the refractory nature of the material and the imperfect character of the tools at the disposal of the ancient workman would permit. It measures 111^{mm} through the longest diameter, 107^{mm} through the shortest, and 44^{mm} in thickness. The concavities, also circular in form, are sunk in the centre of each side, and are about 68^{mm} in diameter with an average depth of about 11^{mm}. The partition wall between the two, is about 22^{mm} thick. The sides are bevelled from the circumference of the concavity down to the outer or rolling edge which is about 20^{mm} broad. These stones are generally known as "chungke stones," and are supposed to have been used by the Indians in playing that game. The perfect polish of the edges of some of them, it is true, weighs against this conclusion;²¹ but the objection loses much of its force in consideration of the fact that the ground on which the game was played was carefully prepared,²² so as to offer the least possible amount of resistance to the rolling stone and thus reduce the chances of chipping or breakage to a minimum. In giving an account of the game Adair says: that it was played on "a square piece of ground well cleaned, and fine sand is carefully strewed over it, when requisite, to promote a swifter motion to what they throw along the surface. Only one, or two on a side, play at this ancient game. They have a stone about two fingers broad at the edge, and two spans round: each party has a pole of about eight feet long, smooth, and tapering at each end, the points flat. They set off abreast of each other at six yards from the end of the play-ground; then one of them hurls the stone on its edge, in as direct a line as he can, a considerable distance toward the middle of the other end of the square: when they have ran a few yards, each darts his pole annointed with bear's oil, with a proper force, as near as he can guess in proportion to the motion of the stone, that the end may lie close to the stone—when this is the case, the person counts two of the game, and, in proportion to the nearness of the poles to the mark, one is counted, unless by measuring, both are found to be at an equal distance from the stone. In this manner, the players will keep running most of the day, at half speed, under the violent heat of the sun, staking their silver ornaments, their nose, finger and ear rings; their breast, arm, and

²¹ Ancient Monuments of the Mississippi Valley, p. 222. Washington, 1848.

²² Antiquities of the Southern Indians, p. 342.

wrist plates, and even all their wearing apparel, except that which barely covers their middle.²³

The Indians were much addicted to this game, and in some one of its different forms it seems to have had a most extensive range. The Cherokees, Natchez and other tribes belonging to the Southern group of Indians, as we have seen, indulged in it to great excess. It prevailed among the Ohio Indians under the name of Tchung-Kee; Mr. Catlin found it existing among the Mandans and other tribes of the Missouri;²⁴ the Mohave Indians of to-day have it in a very similar form which they know as the game of the "hoop and pole"²⁵ and under the name of *maika* it prevailed in the Sandwich Islands.²⁶ Of the stones with which it was played we have different descriptions, some of which may, perhaps, be sufficiently close to establish their identity with that class of implements to which custom has affixed the name. Du Pratz seems to have had our specimen in his eye when he describes it as being "round and flat, about an inch thick, with the edge somewhat sloping."²⁷ Lieut. Timberlake says the stone used by the Cherokees was "round, with one flat side, and the other convex;" and other writers speak of it as "a bowl," or "being in the shape of a truck."²⁸ Later and more satisfactory evidence is furnished by the Rev. J. B. Finley, who states that among the tribes in Ohio, "with which he was acquainted, stones identical with those above described," *i. e.*, in ancient monuments of the Mississippi Valley "were much used in a game resembling the modern game of ten-pins. The form of the stones suggests the manner in which they were held and thrown, or rather rolled. The concave sides received the thumb and second finger, the forefinger clasping the periphery."²⁹ This witness is endorsed by Mr. Squier, and his evidence would seem to be decisive of the matter. Adair bears testimony to the value of these "hurling stones," as he calls them, in the following strong language, which would perhaps be entitled to more weight if one of these very stones which we have attempted to describe, had not been found in a mound buried with

²³ History of American Indians, p. 402. London, 1775.

²⁴ Smithsonian Contributions to Knowledge. Vol. II, Note to p. 136.

²⁵ Native Races of the Pacific States. Vol. I, Note to p. 517. New York, 1874.

²⁶ Eighth Annual Report of the Peabody Museum, p. 22, *et seq.*

²⁷ History of Louisiana, Vol. II, p. 236. London, 1763.

²⁸ Quoted in Antiquities of the Southern Indians, p. 346, *et seq.*

²⁹ Ancient Monuments of the Mississippi Valley, Note to p. 223.

the dead. Speaking of the stones used in his day he says: "they were time immemorial rubbed smooth on the rocks and with prodigious labor; they are kept with the strictest religious care, from one generation to another, and are exempted from being buried with the dead. They belong to the town where they are used, and are carefully preserved."³⁰ There were also found in this grave a wine-glass full of white quartz pebbles, about the size of a small pea, lying in a little pile by themselves, the use of which can only be conjectured. The cranium, number 9,740, of the Museum catalogue was in an excellent state of preservation, as were many of the important bones of the body. Aside from the strongly marked indications of the muscular attachments there was nothing abnormal about these remains, save, perhaps, a small bony excrescence on the fibula and tibia of the same leg, which looks as if, at one time, it might have extended from one to the other.

³⁰ History of American Indians, p. 402. London, 1775.

ON THE
ART OF WAR AND MODE OF WARFARE
OF THE
ANCIENT MEXICANS.

By AD. F. BANDELIER.

Nor only the history of Ancient Mexico, but the true condition and degree of culture of its aboriginal inhabitants, are yet but imperfectly known. Nearly all architectural remains have disappeared; the descendants of the former aborigines have modified their plan of life, and we are almost exclusively reduced, for our knowledge of Mexican antiquities, to the printed and written testimony of those who saw Indian society at Mexico either at the time of, or not too long after, its downfall. But these authors, whether eye-witnesses of the conquest, like Cortés, Bernal Diez del Castillo, Andres de Tapia, and others; or missionaries sent to New Spain at an early date,—as Toribio of Benavent (Motolinia), Sahagun or (towards the close of the 16th, or beginning of the 17th century) Acosta, Davila, Mendieta, and Torquemada,—they are sometimes, on many questions, in direct opposition to each other. Thus the uncertainty is still increased, and the most difficult critical labor heaped upon the student. Furthermore, to magnify the task, we are placed in presence of several Indian writers of the 16th and 17th centuries (like Duran, Tezozomoc, and Ixtlilxochitl), who disagree with each other on the most important questions, quite as much as the Spanish authors themselves.

It may appear presumptuous, while knowing of the existence of such difficulties, to attempt the description of even a single feature of life of Mexico's former Indian Society. Still, while engaged upon translating the Mexican chronicle of Fernando de Alvarado Tezozomoc into the English language, I was so struck by the picture which, unintentionally perhaps, that author exhibits of the condition and organization of the Mexican tribe, that I could not refrain from investigating more closely several features

of that organization. The condition of Mexican society, which is commonly given as subject to a monarchical, nay, even to a despotic rule, appears from the relation of Tezozomoc as one of a military, or rather warlike community. Every feature of their military action is intimately connected with their *civil life*. I could not resist the temptation, therefore, to make the military institutions of the Mexicans, their mode of warfare, the subject of special investigation, trusting that the results of this investigation, however defective, would not be utterly useless in promoting our knowledge of the true condition of ancient aboriginal society on this continent.

The Mexicans proper,¹ better known as the "Aztecs" of Mexico, belonged to the highest order of sedentary or "Village" Indians. Still, *warfare*, and *not agriculture*, appears to have been their chief occupation. They were essentially a tribe of *warriors*, who, as long as they were weak and hemmed in by foes, subsisted on fish, birds, and aquatic plants,² while, as soon as successful sallies from the lake-centre began to extend their sway and power, the Mexicans commenced also to live, in a great measure, upon the produce and industrial resources of *subjugated* tribes. During their migration, from a region lying north of the present state of Durango, in Mexico,³ to the centre of the high table land of that republic, they had subsisted upon the scanty crops which they

¹ We adhere to the appellation "Mexicans" out of deference to a custom established. — *Mexica*, or *Mexitla* would be more correct. The former is used by a distinguished scholar, Señor Alfredo Chavero, of the city of Mexico. (See his "Calendario Azteca.") The etymology of the names "Azteca," "Aztlantlaca," and others, is foreign to the purpose of this essay.

² See Juan de Torquemada ("Los Veinte y un Libros Rituales y Monarchia Indiana" "con el Origen y Guerra de los Indios occidentales," Madrid, 1723. Barcia's reprint of the original, which appeared in 1613), Lib. II, cap. XI, pp. 92 and 93, of 1st volume. (He adds that the art of fishing was unknown to the agricultural tribes of the Valley previous to the coming of the Mexicans.) Also, Fray Diego Duran (Historia de las Indias de Nueva España y Islas de Tierra firme, written about 1579–81, and published by Sr. José F. Ramírez, Mexico, 1867), vol. I, chap. IV and V.

³ Fernando de Alvarado Tezozomoc (Crónica Mexicana,—published in vol. IX, of Kingsborough's Antiquities of Mexico), chap. I, p. 5, "mas de las tierras y montes que hoy habitan los Chichimecas, que es por Santa Barbara." Duran, in speaking of the "seven caves" (Chicomoztoc), from which the Nahuatl tribes (Mexicans included) all pretended to issue, says: "These caves are in Teoculuacan, otherwise called Aztlan, a country which we all know to be towards the north, and connected with Florida." (Chap. I, p. 8.) "They went over and through all the country of the Chichimecas, over the new lands and plains of Cibola." (Chap. II, p. 21.) Cibola, as it has been suggested, was the name given to Zuñi, a pueblo still extant in New Mexico. (See "Historie of the Great and Mightie Kingdom of China, and the situation thereof, etc., etc.," translated from the Spanish of the Padre Juan Gonzalez de Mendoza (1588), by R. Parke, and republished by the Hackluyt Society, in its volume of 1833. (2 volumes.) Zuñi: "the Spaniards do call it Cibola.")

might occasionally have raised, as well as upon the chase. But during this very period also, their chief divinity and subsequent principal idol, Huitzilopochtli, god of war, is reported to have uttered these prophetic words: "And I was sent on this journey, and "my office it is to carry arms, bows, arrows, and shields; war is my "chief duty, and the object of my coming. I have to look out in "all directions, and with my body, head and arms, have to do my "duty in many tribes, being on the borders and lying in wait for "many nations, to maintain and to gather them, although not graciously." Proceeding to state a number of objects, *subsequently* given to the Mexicans in tribute, he closes as follows: "All this I "shall own and hold, for I am sent after it, it being my office, and "I came for this purpose."⁴ Imbued with a spirit of which this utterance is merely a legendary form, the Mexicans made their appearance among the agricultural tribes of the valley of Mexico as a crowd of famished, but desperate, intruders, were received as such, and, after a brave resistance, compelled to take refuge in a naturally isolated spot of dry land, surrounded by swamps and marshes.⁵

In this defensive position, which the Mexicans subsequently converted into the strongest one ever occupied by Indians up to the 16th century,⁶ they carefully nursed and developed their war-

⁴Tezomoc (Cap. I, p. 6). Joseph de Acosta (Historia natural y moral de las Indias, 1608. Lib. VII, chap. IV, p. 459). M. Brasseur de Bourbourg ("Popol-vuh, "Intr., p. 137 and p. 140.") intimates Huitzilopochtli to be a myth common to all the aborigines of Central America in general.

⁵The spot to which the Mexicans fled, and which subsequently became the nucleus of Tenuchtitlan, and of Tlatilulco, was *dry land*, in the midst of canes and reeds. (Tezomoc, cap. I, p. 6, "porque el dia que llegaron a esta laguna Mexicana, en medio "de ella estava, y tenia un sitio de tierra, y en el una Peña.") Fray Geronimo de Mendota (Historia ecclesiastica Indiana," published by my most esteemed friend, Señor J. G. Icazbalceta, the learned Mexican scholar, in 1870. Lib. II, cap. XXXIV, p. 148. "Y luego se hicieron fuertes en este sitio, tomando por muralla y cerca las aguas y "emboscadas de la juncia y carrizales y matorrales de que estaba entonces poblada y "llena toda la laguna, que no hallaron el agua descubierta sino en sola una encrucijada "de agua limpia desocupada de los matorrales y carrizales, formada a' manera de una "aspa de San Andrés. Y casi al medio de la encrucijada hallaron un peñasco"). Torquemada (Lib. II, cap. X, pp. 91 and 92. "En este lugar se ranchearon (como decimos "en el libro de los Poblaciones) haciendo unas pobres, y pequeñas choças, rodeados "de carrizo, y Espadañas, que ellos llaman Xacalli," etc., etc. (Acosta, Lib. VII, cap. VII, p. 463. " . . . y dividiéndose una parte y otra, por toda aquella espesura "de espadañas, y carrizales, y juncia de la laguna, comenzaron a buscar por las señas "de la revelacion el lugar tan deseado.")

⁶There was, to my knowledge, but one similar position: that of Atitlan, in Guatemala. (See: Segunda Relacion por Pedro de Alvarado a Hernando Cortes, 28 July, 1524, pp. 460, 461 and 462, of Vol. I, of "Historiadores primitivos de Indias," by Don Enrique de Vedia, Madrid, 1852.) That tribe was regarded as very fierce, also.

like customs and propensities. War, at first *defensive*, afterwards *offensive*, became the *life of the tribe*. Religion demanded it for its bloody rites; revenge, so deeply rooted in Indian nature, called for it at every moment. But especially was it required for the *subsistence* of the tribe, whose increasing numbers could not live from agriculture on the scanty soil allotted to them, and who, therefore, were compelled to depend upon the spoils gathered from inroads upon their neighbours. *If there was no war in progress, the Mexicans deemed themselves "idle."*⁷ We may therefore presume that the military organization of the Mexicans, their preparations for warfare, and the mode of the latter, are features of importance, and worthy of serious attention.

Every male of the Mexican tribe was born a warrior. When still a babe his father placed alongside of the child a small bow⁸ and some arrows, in token of its future duties. There was no military caste at Tenuchtitlan or Mexico; with the exception of children, old people, infirm or crippled persons, and sometimes priests, every one had to go to war. Boys fifteen years old were taken along, and in some instances it was even directed "that no youth over fifteen years of age should remain; that all had to go, except children and old people."⁹ Thus there was no "standing army" the available force being composed of all the able-bodied men of the tribe of Mexico.¹⁰

⁷ Tezozomoc (Cap. XXI, p. 32). "Pasados algunos años dijo el rey Moctezuma a "Zihuacotl Tlacaeleltzin general y oydor: pareceme que ha muchos dias que estamos "muy ociosos." This term, "idle," applies to the lack of any war, since immediately thereafter the war against Chalco was kindled by the most wanton provocation on the part of the Mexicans.

⁸ Fr. X. Clavigero (Storia del Messico. Cesena, 1780. Lib. VI, cap. XXXVI). Francisco Lopez de Gomara ("Historia general de las Indias." Second part, "Conquista de Méjico," contained in the collection of Vedia, volume I,—"This done, they put in "the right hand of the child, an arrow if a boy, a shuttle if a girl, to mark that he would "have to improve by the use of arms, and she by spinning and weaving," p. 438. Vedia, I). Torquemada (Lib. XIII, cap. XX, p. 450, of Vol. II, says this was done four days after the birth of the child). Clavigero intimates that only those children "whose fathers were warriors," received the token, but this is not at all confirmed. Motolinia ("Historia de los Indios de la Nueva-Espana" in "Coleccion de Documentos para la "Historia de Mexico," by Señor Icazbalceta, Mexico, 1866, volume I. "Y entonces si "era varon ponianle una saeta en la mano, . . . el varon porque fuese valiente para "defender a si y a la patria, porque las guerras eran muy ordinarias cada año." Tratado I. cap. V, p. 37). There were no hereditary professions or trades, so to say.

⁹ Tezozomoc (Cap. LXXXIV, p. 141, and cap. XC, p. 153). Acosta (Lib. IV, cap. XXVI, pp. 442 and 443).

¹⁰ What the Germans call "*Allgemeine Wehrpflicht*," existed among the Mexicans on the most extensive scale. But their forces, although always ready, never went *permanently* outside of the pueblo, for they were not numerous enough, and did not gather

We have not the slightest reliable indication concerning the *strength* and numbers of that force.¹¹ This point is as vague and indefinite as the number of the population of the pueblo itself. Both, being closely connected, suffer from the same contradictions and exaggerations.¹² It is true that a "guard" of 10,000 men is mentioned as having occupied always the square of the main temple ("teocalli").¹³ But, aside from the grossly exaggerated numbers, "guards," in the sense of a military body doing permanent duty, were unknown to the Mexicans.¹⁴ The scanty mention of a body guard of Montezuma appears an imaginary tale if we look for its presence where and when it should have been most conspicuous: at the meeting of Montezuma and Cortés on the causeway,¹⁵ and when Cortés carried that chieftain away from his house as a hostage. It is an established fact, that only unarmed Indians met Cortés on his entrance to Mexico, and it is equally positive, that no "guard" came to Montezuma's rescue.

stores in sufficient quantities for such a purpose. Within the pueblo of Mexico there was no need of being armed, and therefore every Mexican went unarmed in the pueblo. The "guards" of which Gomara and Bernal-Diez both speak, never existed. See Gomara ("En la ciudad nadie trae armas," p. 345, vol. I, Vedia).

¹¹ Not even Bernal-Diez contains a statement. Fernando de Alva Ixtlilxochitl ("Relaciones historicas," *Relacion XIIIa*, in Vol. IX of Lord Kingsborough's *Antiquities of Mexico*, "De la venida de los Españoles," translated also into the French by Mr. Ternaux-Compans, and published under the title of "Cruautés Horribles des conquérants du Mexique," in the first series of his inestimable collection of translations) says: "the Mexicans lost over 240,000 men" during the siege of Mexico. The only reasonable approximate I found in Durán (*Hist. de las Indias*, etc., cap. XXXVII, pp. 287 and 288). Before the Mexicans (including Tezucuo and Tlacopan and the others of the valley) set out against Michhuacan, in 1479, they counted their forces and found 24,000 men ("allaron que auia veinte y quatro mil combatientes"). This is possible.

¹² The population of Mexico is variously reported. The extremes are: 60,000 *souls* ("sesenta mila habitatori") of the "Anonymous Conqueror" (Col. de Doc., Icazbalceta. Vol. I, p. 391), and 60,000 *families*.

¹³ The length of the walls of that square was "one cross-bow shot," after Gomara. How could 10,000 men remain there always, besides the priests and their numerous assistants?

¹⁴ "Guardas" are mentioned by Bernal-Diez del Castillo ("Historia verdadera de la conquista de Nueva-España" in vol. II, of Sr. Vedia's collection, cap. XCV); by Gomara (p. 342 of vol. I, Vedia). Torquemada (Lib. II. cap. VI, p. 544, vol. II), and others. But Cortés and Andrés de Tapia make no mention of them.

¹⁵ Three eye-witnesses of that celebrated meeting have described it: Cortés ("Cartas de Relacion," in Vedia, I, "Carta Segunda," p. 25). Bernal-Diez (Vedia, II, cap. LXXXVIII, p. 83), and Andrés de Tapia ("Relacion hecha por el Señor Andrés de Tapia, sobre la conquista de Mexico," in vol. II, of Icazbalceta's Col. de Documentos, p. 578). Neither of them would have omitted to notice armed men among the Indians, had there been any with Montezuma.

The Mexicans, on their part, could not have failed to make an ostentatious display of armed soldiery, had they existed, when they met the armed strangers at the entrance to the pueblo.

(Cortés' daring and successful seizure of the Mexican chieftain was easier than it is generally supposed, since the tribe was not prepared for it, but only for outside enemies.)¹⁶

It is equally untrue that any Mexican "garrisons" were maintained among conquered and subjected tribes.¹⁷ The military power of the Mexicans was preserved at home, in a latent state, so to say, but still, as we shall hereafter see, ready to sally forth at a signal from the council of chiefs directing their affairs. But this presupposed, on the part of the tribe, systematic *training*, proper *armament*, and a peculiar *organization*.

At an early age the boy was taught the use of the bow and arrow in fishing and hunting;¹⁸ also the use of the dart or javelin. The *chase*, both on land and water, was an introduction to the stern duty of *war*.

¹⁶ *Ixtlixochitl* ("Histoire des Chichimèques ou des anciens rois de Tezcuco," translation of Mr. Ternaux-Compans, chapter 85. "All the Spaniards forthwith returned to their palace, together with a great number of lords of the city, parents and friends of the King, which sought to read from his countenance whether he wished them to free him again). The same author (*Relacion XIIIa*. "The nobility, and all the military chiefs of Mexico, dumbfounded by this occurrence, returned to their houses"). Gomara, who (*Vedia*, I, p. 345. "Corte y guarda de Moteczuma," mentions 3,000 body guards, forgets them completely (p. 351) when he relates Montezuma's capture. Cortés (*Carta-segunda*. *Vedia*, I, p. 27) does not speak of any guard being with the chief. Neither does A. de Tápia. *Col. de Doc.* II, p. 580.) The capture of Montezuma did not, however, have the desired effect. He was not as powerful as the Spaniards believed, and his influence vanished as soon as he was a prisoner, and therefore actually disqualified for office.

¹⁷ The bodies of Mexican warriors which Cortés may have met at different places outside of Mexico when he moved upon that tribe the second time, were not garrisoning those places, but simply corps sent out specially against the Spaniards. Neither at Cempoal, nor at Quilahuiztlan, had he met garrisons of Mexican troops. In the fight wherein Juan de Escalante was killed, *natives of the country*, and not *Mexicans*, opposed him. Quauhpopoca was not a Mexican governor, but "chief of that place called 'Almería' (Cortés, *Carta Seg.*, *Vedia*, I, p. 28), "a vassal of Montezuma" (A. de Tápia, p. 579), "chief of Nahuatlán" (Gomara, p. 354) (Clavigero, lib. VIII, cap. XXX).

Iztapalapan, Mexicaltzinco, Huitzilopochco, were not held by Mexican warriors when Cortés passed through those places. On the route from Cempoal to the confines of Tlaxcallan, through a country overrun formerly by the Mexicans, and tributary to them, there was not a single specifically Mexican stronghold, and no other Mexicans or Aztecs were met by Cortés than messengers and collectors of tribute; without any armed retinue whatever. No Mexican force hovered about the confines of Tlaxcallan, their most dangerous enemy, or "occupied" Chalco, the most warlike and unruly tribe of the valley, which Mexico had overpowered. Only the fear of the murderous forays which the Mexicans might execute, from their almost inviolable stronghold in the lagoon, held those tribes in subjection; and no permanent military occupation. Tápia says: "In the conquered districts they put stewards and collectors, and although their own chiefs commanded the people, they were below Mexican power." (p. 579, *Col. de Doc.*, II.)

¹⁸ A. de Humboldt ("Vues des Cordillères et monuments des peuples indigènes de l'Amérique." Ed. 1816, 8vo, tom., II, p. 313). Also, "Raccolta di Mendoza," in Lord Kingsborough.

When fifteen years old, the youth was placed in charge of certain chiefs¹⁹ (the "telpuchtlato" or "achcacautin") who kept them under their oversight until they married. They were educated in communities "for the service of the tribe and for warlike purposes;"²⁰ were allowed, even at the age of fifteen, to go to war either armed or as carriers only,²¹ and had their respective "school houses" ("telpuchcalco," houses of the youth); one in each of the four quarters of Mexico which formed the basis of the tribe's military organization, as we shall hereafter see. At these houses they were gradually trained to the handling of weapons.²²

There were no regular times set for military practice. But every twenty days, at least, there occurred a religious festival, at which the warriors appeared in full costume, and, their chiefs included, they "skirmished," showing and practicing their skill in handling arms.²³ The youth were not only invited to such occa-

¹⁹ Idem: "A quinze ans, le père présente deux fils à deux différents maîtres du temple et du collège militaire. . . ." The boy (Mexican "piltontli") then became a youth ("telpuchtl")—Alonso de Molina. "Vocabulario en lengua Mexicana y castellana." Mexico, 1571. Parte IIa, p. 97).

²⁰ Bernardino de Sahagun ("Historia universal de las cosas de Nueva España," in vol. VII, of Lord Kingsborough, lib. III. Appendix, cap. IV, p. 118. "Y así ofrecían la criatura, á la casa de telpuchcall; era su intencion que allí se criase con los otros mancebos para servicio del pueblo y cosas de guerra." Also cap. V, 119). Mendieta (Lib. II, cap. XXIV, p. 124. "Los otros se criaban como en capitanías, porque en cada barrio había un capitán de ellos, llamado telpuchtlato, que quiere decir "guarda ó capitán de los mancebos. . . . También tenían por sí su comunidad, sus casas "y tierras, etc., etc.") Telpuchtlato signifies "Speaker to the youth" (from "Telpuchtl," youth, and "tlatoani," speaker. Molina, II, p. 141). Clavigero (Lib. VII, cap. III). Acosta (Lib. VII, cap. XXVII, p. 444. Para este efecto avia en los templos casa particular de niños, como escuela, o pupillage distinto del de los moços y moças del "templo"). Tezozomoc (Cap. LXXI, p. 121 and LXXVIII, p. 134). "Telpuchcall" is derived from "telpuchtl," youth, and "calli," house. The "achcautli," to which we shall refer hereafter, are variously designated, even as priests (by Mendieta), as "captains of the guard" (by Torquemada), as "an officer, to whom they (the youth) were entrusted" (by Clavigero).

²¹ Mendieta (Lib. II, cap. XXIV, p. 124). "Some of these youth, the strongest ones, went to war, and the others, also, went to see how the force practiced at arms." Tezozomoc (Cap. LXXI, p. 121) "and all the youth examined, such as had not gone, went along, carrying arms and supplies, and to become encouraged by the feats they might witness."

²² Mexico divided into four "calpulli" ("barrios"), each of which had its "telpuchcall,"—"where the achcacautin showed and taught them the use of arms and how to combat valorously." (Tezozomoc, cap. LXXI and LXXVIII, p. 134.)

²³ For the long list of religious festivals of the Mexicans, ordinary as well as extraordinary, we beg to refer to almost any one of the authors of the 16th, 17th, and 18th centuries, on Mexico. As to the military displays and exercises during the feast, I refer particularly to Antonio de Herrera ("Historia general de los Hechos de los Castellanos en las Islas y la Tierra Firme del Mar Oceano." Edition of 1730. Decada II, lib. VII, cap. XI, p. 187). "Nobody was allowed to carry arms about the city, but only to war, to the chase, or when on guard to the King. On days of festivities, and at

sions, but their presence was obligatory, that they might see and learn. Besides, as often as war was proclaimed, a general muster and rehearsal was held at each quarter.²⁴ We have no detailed report of such exercises, of the evolutions, if any, carried out by the warriors, but an incident of the history of Mexico may furnish us with an approximate picture. When, in 1473, the tribe of Tlatilulco, independent at that time from Mexico, agreed upon attacking the latter, they practised beforehand, and with as much secrecy as possible.²⁵ Setting up posts of hard wood, they beat against them with their swords and clubs; they sped arrows and threw darts at thick wooden planks, and lastly they went out into the lake and shot at birds flying.²⁶ This *may* be supposed an illustration of the manner in which the Mexicans practised at arms.

These exercises partaking, frequently at least, of a religious character, they ordinarily took place at the squares surrounding temples, more particularly in the great place of the chief "house of God" ("teo-calli") of Mexico.²⁷ Immediately preceding a foray or campaign, warriors and youth aggregated there also, not only to practice, but especially to receive their weapons out of the

"other times appointed, the latter caused the young men to practice at arms, that they "might be ready for war. He even set out premiums to those who would distinguish themselves, and not only was present, but sometimes used the bow and sword, taking "part in the exercises." Also to Torquemada (Lib. X, cap. XIV, p. 256, of 2d volume, but especially cap. XI, p. 232. "En esta fiesta hacian alardes, y escaramuças todos los "Soldados y Hombres de Guerra, donde cada qual pretendia aventajarse al otro; y se "mostraban muy valientes, y esforçados; de donde nacia señalarse muchos, y aventu- "rarse á casos muy peligrosos"), and Mendieta (Lib. II, cap. XXXI, p. 143).

²⁴ Tezozomoc (Cap. LXXXIV, p. 147, and cap. XC).

²⁵ It is well known that the Mexicans had formerly divided into two tribes: the Mexicans proper, of Tenuchtitlan (Tennochcas), and those of Tlatilulco. The latter never denied their common descent. At the time of their conspiracy to overthrow the Tenuchca they are said to have agreed upon: "that Mexicatli-Tenuchtitlan should be obliterated, and Tlatilulco-Mexico should become head of the world" (Tezozomoc, cap. XLI). It is not devoid of interest to know that, as late as 1473 (the year 7 "calli"), or only 48 years previous to the Spanish conquest, the very existence of the Mexican power became seriously threatened by a small tribe, subsisting as an independent people within musket range of Mexico. This fact, and the negotiations of the Tlatilulca with the other tribes of the valley, at that period, furnish one of the best illustrations of the loose manner in which all the tribes subject to Mexico at the time of Cortés were bound to the Mexicans. After the overthrow of the Tlatilulcans by Axayacatl of Mexico, their pueblo became the fifth "quarter" (calpulli), and under Spanish rule it bore the name of "Santiago."

²⁶ Tezozomoc (Cap. XLI). Durán (Cap. XXXIII, pp. 259 and 260). According to the latter, they at first practised with the sling, throwing stones against a wooden image; he does not mention the use of the sword or club, only missiles. Otherwise, both authors agree perfectly.

²⁷ Tezozomoc (Cap. LXXXIV, p. 147). Herrera (Dec. II, lib. VII, cap. II, p. 187, of 1st volume).

public storehouses connected with the temples of each tribal subdivision.²⁸

The name given to these public store-houses was "houses of darts" (*tlacochcalco*).²⁹ They were, probably, not limited to the immediate vicinity of the chief temple, but each subdivision of the pueblo had its "house of darts" as well as its central "*teocalli*." ³⁰ The following description of an aboriginal Mexican "pueblo," furnished by a missionary who arrived in New-Spain as early as

²⁸ Tezozomoc (Cap. LXXI, p. 121. Immediately preceding the foray against Xocnocho, "each day the youth went to the quarters, to practise at the school of arms, 'telpuchcalco" *Idem*, cap. LXXVIII, p. 134). The *Anonymous Conqueror*, whose relation is contained in vol. I of Sr. Icazbalceta's "Col. de Documentos," both in the original Italian taken from Ramusio ("Relazione di alcune cose della Nuova Spagna, & Della Gran Citta di Temestitan Messico, fatta per uno Gentil' homo del "Signor Fernando Cortese"), and in the Spanish translation by the distinguished Mexican scholar, says (p. 394, "Dei tempi, é Meschite che havevano"): "Before they left (for war), they all went to the principal mosque ("meschita maggiore"—main *teocalli*) and provided themselves with the arms stored over the main entrances" (of the square around the temple). We have few positive indications as to the true situation of the store-houses, beyond that they were probably connected with the "school, houses" ("telpuchcalco"), and therefore with the temples. Torquemada, who gives an elaborate description of the chief temple of Mexico (Lib. VIII, of 2d volume), says (Cap. XI, p. 146): "and at each one of the four entrances to the court of the temple—there was an extensive (very large) hall, connected with numerous rooms and closets, high as well as low, which served as houses of arms, where these were kept together with the ammunition. For, as they regarded the temples as their strongest places, and their retreats in case of danger, they held there their arms and means of defence." He further mentions, under the uncouth name of "*Tlacochcalcoacatlacapan*," "another hall Here they kept a quantity of arrows (or darts, 'saetas') which were made every year, and there deposited until wanted." See also Acosta (Lib. VI, cap. XXVII). Gomara (Vedia, I. "El templo de Méjico," p. 349). "At each door (of the four) of the court of the principal temple there was a large hall surrounded by high and low additions. These were filled with arms, like public and communal houses, for the temples were the strongholds of each pueblo, and therefore contained the arms and ammunition." Of course the square of the great "*teocalli*" of Mexico attracted principal attention.

²⁹ "*Tlacochcalco*," or "*Tlacochcalli*," derives from "*tlacochtili*," dart, and "*calli*," house.

³⁰ Every author concedes that there were several "houses of arms" at Mexico. Bernál-Diez says there were two (Cap. XCI, p. 87, of vol. II, Vedia). Gomara ("*Casas de armas*," Vedia, I, p. 345) says: "Montezuma had some (rather 'several' 'algunas') houses of arms, whose blazon were a bow and two quivers over each door." Herrera (Dec. II, lib. VII, cap. XI, p. 186) says; "he had, not one, but many houses for the 'keeping and storage of arms;" (Dec. II, lib. VII, cap. XVII, p. 197) he copies almost textually Gomara's statement about the halls over the entrances of the court to the temple of Mexico, and adds also, like Gomara, "porque los templos, aliende de que servian de casas de Oracloen, eran las Fortaleças con que en tiempo de Guerra mas se defendian, i tenian en ellos la municion, i Almacen." Previously he says (p. 196): "There were many temples in Mexico; according to the parishes, or quarters, of which there were many." See also Motolinia (Trat. III, cap. VIII, p. 188): "porque tenian muchas casas de varas con sus puntas de pedernal, etc., etc." It shows that the storehouses were distributed over the pueblo, and not only limited to the main temple. Cortés, when he burnt Quauhpopoca, emptied for that purpose the arsenals of the main

1524, gives an approximate picture of the distribution of these edifices, or rather clusters of buildings.³¹

"They called these temples 'teocallis,' and we found all over the land that in the best part of the settlement they made a great quadrangular court, which, in the largest pueblo, was one cross-bow shot from one corner to another, while in the smaller places it was not as large. This court they enclosed by a wall, many of which enclosures were with battlements; the entrances looking towards the chief highways and streets, which all terminated at the court, and even, in order to still more honor their temples, they led their roads up to these in a straight line from two and three leagues distance. It was a wonderful aspect, to witness from the top of the chief temple, how from all the quarters and the minor places, the roadways all led up in a straight line to the courts of the teocallis, . . . the devil did not content himself with the aforesaid teocallis, but in each pueblo and in each quarter, as far as a quarter of one league off, there were other small courts containing, sometimes only one, sometimes three or four teocallis . . ."

The arms and stores contained in the "houses of darts," are often regarded as having belonged to the chiefs, or so-called "Kings" of the Mexican tribe, and the buildings themselves are mentioned as "royal storehouses," or "arsenals." It was not so, however. The arms and stores belonged to the people, and they were under the control of certain stewards ("calpixca") who distributed them to the military chiefs of the tribe, whenever any decision of the head-council, or any sudden emergency required it.³²

temple, he thought thus to disarm the Mexicans, burning the arms (500 cartloads, says Tápia). Herrera, Dec. II, lib. VIII, cap. IX, p. 214 ("pareciendo a Hernando Cortés, que era mas seguro consejo quitar las armas al enemigo pues la ocasion presente era para ello muy aparejada"), together with that chief. But he only emptied one of these "houses of arms," and soon found out that the Mexicans had several others left.

³¹ Fray Toribio, of Benavente (Kingdom of Leon in Spain), calling himself "Motolinia" (poor, unfortunate, unhappy), arrived at Mexico about the 17th of June, 1524. He was one of the first twelve Franciscan missionaries sent to New-Spain. The above quotation is from his "Historia de los Indios de Nueva-España," written about 1540. (Tratado I, cap. XII, pp. 63 and 65.) He died on the 9th of Aug., 1569.

³² The "calpixqui" were civil functionaries, stewards, gatherers of tribute, to whose care the public stores were entrusted. The name is generally translated as "mayordomo," even by Molina (Vocab., II, p. 11). Its proper signification, however, would be derived from "tlacatl," man, and "pixqui," "what is gathered from the crops," therefore collectors or gatherers. Tezozomoc relates that before the foray against the tribes of Cuertlaxtlan: "Thus the calpixca or stewards of the tribes gave to their quarters (stores and supplies of all kinds, too numerous to mention)." (Cap. XXXII, p.

Even ornaments and dresses were also preserved at some of those places.³³

We may divide the *armament* of the Mexicans into weapons for offence and defensive armour for protection.

Among the offensive arms the *missiles* occupy the principal place, as we may infer from the general mode of Indian warfare, which consists in striking an enemy, if possible, from a distance, and with as little risk to the assailant as possible, too. *Darts* or *javelins*, *bows* and *arrows*, *slings* and *stones*, were therefore of primary importance to the Mexican warrior.

The dart or javelin ("*tlacochtli*," "*tlatzontectli*") was the main weapon of the Mexicans.³⁴ It consisted of a short spear made of hard and elastic canewood ("*otlatl*"), whose point, shaped after the manner of the well known arrow-head, was mostly of flint, of obsidian, and perhaps, occasionally, of copper. This point or head was inserted into the stem or rod through a slit at its end, gummed in, and fastened besides by a strong thread wound around it.³⁵ The javelin sometimes had two or three branches with points, so as to strike several wounds at once,³⁶ the warrior often had it tied to his arm by a long cord, but sometimes, also, he carried a number of darts loose.³⁷

49.) Bernal-Diez says that "mayordomos" had control of the "houses of arms." (Cap. XCI, p. 87, Vedia, II.) At their head was the "Petlascalcatl," "or man of the house of chests," from "petlacalli," chest or box made out of canes. Bernal-Diez mentions that functionary, but says they called him Tapia, his Indian title he does not remember (Cap. XCI). Each tribe subject to Mexico had a "calpixqui" residing among it.

³³ Tezozomoc (Cap. XXXIV, p. 35, and LXX, p. 119).

³⁴ Tezozomoc never mentions the bow and arrow, but always "varas tostadas," "varas arrojadas," "tlatzontectli." Rods hardened by fire were used *once* by the Mexicans, at the time of their most abject misery, when fighting for the Culhua against Xochimilco (Clavigero, lib. II, cap. XVI). Even the poor aborigines of the Lucayos (Bahamas) used points of fish-bone, and not simply hardened points of wood. Mendieta (Lib. II, cap. XXVI, p. 130).

³⁵ Gomara ("Conquista," p. 345. Vedia, vol. I).

³⁶ Clavigero (Lib. VII, cap. XXIII).

³⁷ It would be difficult, otherwise, to account for the number of darts "spent" in the engagements, had each warrior carried but one javelin. Torquemada (Lib. VI, cap. XXI, p. 43) mentions a sort of cross-bow (ballesta), which he calls "atlatl," by the means of which they are said to have sped their darts ("que tiraban con cierto artificio, que llamaron Atlatl"). "Atlatl," however, means a strap ("amiento") fastening the helmet around the chin. Mendieta says: "Al principio jugaban de hondas y varas como dardos que sacaban con jugaderas y las tiraban muy recias." "Jugadera" means a shuttle. In his note to Durán (Cap. IV, p. 81), "inventando aquel modo de armar y varas arrojadas que llamamos fleugas." Señor Ramírez says "Refiérese probablemente al arma Mexicana llamada Atlatl, especie de ballesta, que según la tradición fué inventada en Tacubaya . . ." "Fleuga" is a trident or harpoon. The use of the cross-bow, therefore, by the Mexicans, as the term "ballesta" implies, while

Bows and arrows were used, probably, by every warrior, but they were a less *convenient* weapon than the simple dart.³⁸ The bow ("*tlauitolli*")³⁹ was made of the same wood as the stem of the javelins ("*otlatl*"), its length varied according to the tribes, but those of the Mexicans were short.⁴⁰ The chord was made out of the hair or sinews of deer. The arrow ("*mill*") needs no description. Sometimes it was with several branches or heads. They carried the arrows in quivers suspended from the shoulder. Poisoned arrows were not in use among the Mexicans.⁴¹

Last among the missiles, though not least in importance, were pebbles and stones, thrown by slings or by hand.⁴² The store-

we shall not deny it, appears to us not yet established as a fact. They may have had something similar to it, however, but it was no commonly used weapon, and we would beg to suggest that the "invention" of the "*atlatl*" at Tacubaya relates, not to the cross-bow, as Sr. Ramirez indicates, but simply to the "harpoon" (*flsga*) or javelin fastened to its carrier by a long cord. The Mexicans, besides, had a very characteristic name for cross-bow (Molina, I, p. 116). It is "*tepuztlautilolli*," composed of "*tepuztli*," iron or copper, and "*tlauitolli*," bow,—a bow of IRON,—plainly indicating that the weapon became known to them only after or during the conquest. Gonzala Fernandez de Oviedo y Valdés ("Historia general y natural de Indias," written towards the middle of the 16th century, but published in full only 1853, by the Academy of Madrid, gives (Vol. III, plate I, figs. 2 and 3) a drawing of an instrument used by the Indians of Cueva (Coyba), on the Isthmus of Darien, for throwing their darts. He says (Lib. XXIX, cap. XXVI, p. 127): "In some sections of the country the Indians are warlike, in other sections not. They hardly ever use the bow, but fight with macanas, long lances, and with darts which they throw by means of *estóricas* (a kind of *aríentos*), a well-made wooden contrivance. With this they hurl the javelin, always keeping the '*estórica*' in hand." The drawing referred to represents a wooden slide, shorter than the dart itself. The latter was laid on it. On each side of the slide there was a ring through which they passed the first and second fingers, holding it between and resting it on the palm of the hand. This gave them considerable accuracy and power in throwing the dart. An uncouth but very plain representation of a similar contrivance is found on plate V to the fifth chapter of the 3d Treatise of Durán, thus showing that the "*atlatl*" was nothing else but Oviedo's "*estórica*." Furthermore, Mr. F. W. Putnam, Curator of the Peabody Museum, identifies the "*atlatl*" in all probability with the "throwing stick" of the Aleutians of the Northwest, and still in use among them.

³⁸ Although the bow and arrow are a very deadly weapon, the *dart* was most convenient, and therefore most popular among the Mexicans; at least to open the combat (Mendieta, lib. II, cap. XXVI, p. 130).

³⁹ Molina (Vocabulario I, p. 13).

⁴⁰ Clavigero (Lib. VII, cap. XXIII). Some tribes are mentioned as using bows 5½ feet long. The natives of Tehuacan are stated to have been extraordinarily good archers (Mendieta, lib. II, pp. 130 and 131).

⁴¹ There is no trace of poisoned arrows north of the Isthmus of Darien. (See "Relacion de los Sucesos de Pedrarias Dávila en las provincias de Tierra firme ó Castilla del oro," etc., "escrita por el Adelantado Pascual de Andagoya," in vol. III of "Coleccion de los Viajes y Descubrimientos," by Don Martín Fernandez de Navarrete, Madrid, 1829.) Also, Pedro de Cieza, of Leon ("Crónica del Peru," in Vedia, vol. II, cap. VII, p. 361).

⁴² Mendieta (Lib. II, cap. XXVI, p. 130). Stones were picked up while fighting and thrown at each other in the field. Tezozomoc mentions "stones sent off with cords" ("con cordeles"), otherwise we have no description of the sling.

houses contained supplies of slings ("*tematlal*"),⁴³ while the missiles themselves were accumulated for defence on the flat house-tops,⁴⁴ or, in the open field, taken up "*ad libitum*" for aggressive use.⁴⁵

Next in importance to the aggressive missiles, as weapons intended for *closer quarters*, were, to the Mexicans, the *sword* and *club*. The spear ("*tepuztopilli*")⁴⁶ was probably not an *original* Mexican weapon, but, while they used it against the Spaniards towards the close of their defence, it still appears to have been most in use among more southerly tribes.

The *sword* ("*maccuahuitl*") was 3½ to 4 feet long, and 4 to 5 inches wide.⁴⁷ The anonymous conqueror says:⁴⁸ "In order to make their swords, they cut out a blade of the shape of our *two-handers*, but with a shorter hilt, and about three fingers thick. They cut a groove along the edge, and insert into this groove a hard stone, cutting like our blades of Toledo."⁴⁹ This stone was *obsidian* ("*Iztli*"), and the edge of the sword, composed of fragments "three inches long and two inches broad," became at the outset as sharp as a razor. These fragments were very firmly cemented into the wood, but, although the sword was double-edged, it soon became transformed into an ordinary club, since obsidian is very brittle, and splintered after the first heavy blows upon iron armour. At the *beginning* of an engagement, this weapon was much feared by the Spaniards.⁵⁰ The warrior carried

⁴³ Clavigero (Lib. VII, cap. XXIII). Motolinia (Tratado III, cap. VIII, p. 188). Herrera (Dec. II, lib. VII, cap. XI, p. 187). The word "*tematlal*" is difficult to etymologize. It may derive from "*Temac*," *in somebody's hands*, and "*atlatl*," *strap*, or from "*Temalli*," *substance or body*, and "*atlatl*."

⁴⁴ Bernal-Díez (Cap. LXXXIII and CXXVI). Cortés (Carta. IIIa. Vedia, I, p. 41). Gomara (Vedia, I, p. 873).

⁴⁵ Cortés (Cart. IIa. Vedia, I, p. 80). Mendieta (Lib. II, cap. XXVI, p. 130).

⁴⁶ From "*tepuztli*," iron or copper, and "*topilli*," rod or pole. The long spears or lances were mostly used by the inhabitants of Chiapas. During the siege of Mexico, the aborigines defending it used "long lances of ours, or scythes ('*dalles*,' spears), much longer than ours, from the arms which they had captured at our defeat and discomfiture in Mexico" (Bernal-Díez, cap. CLI; Vedia, II, p. 178).

⁴⁷ Clavigero (Lib. VII, cap. XXIII). Bernal-Díez (Cap. LXII and LXV). The latter calls them "*espadas de dos manos*."

⁴⁸ "El Conquistador Anónimo" ("Col. de Doc.," Vol. I, p. 375).

⁴⁹ See also Herrera (Dec. II, lib. VII, cap. XI, p. 187). Mendieta (Lib. II, p. 130). Motolinia (Trat. III, cap. VIII, p. 188).

⁵⁰ Clavigero positively asserts that the edge was of *obsidian*, and flint could never have given such a cutting blade. Mendieta (Lib. V, Parte II, cap. VII, pp. 757 and 758) calls the sword "*macana*," and says it was double-edged: "*cercada de navajas de piedra por ambas partes*." The first blows were terrific, but only these, *then* the edge broke. See Herrera (Dec. II, lib. VII, cap. XI, p. 187). "*! enconan las Espadas de Palo*

his sword attached or suspended from the wrist.⁵¹ Clubs ("quauholloli") may have been also in use. But battle-axes, or anything like the Peruvian "chumpi," do not appear to have been known to the Mexicans.⁵²

If now we turn to the *defensive* arms, to the *protective armour* proper, of the Mexicans, we meet in the first instance the *shield* ("chimalli"). Not the merely ornamental shields used and carried by warriors and chiefs on festive occasions only,⁵³ but the

"con agudos Pedernales, engeridos por los filos, . . . que dando grandes golpes no se deshacia; cortaban en lo blando, quanto topaban, pero en lo duro resurtian, como eran los filos muy delgados"). Clavigero (Lib. VII, cap. XXIII). "The first blows alone were fearful, as the edge soon wore out." (The name "Macuahuitl" may derive from "maiti," hand, and "cuahuitl," tree). The tables accompanying the work of Durán have many representations of the maccuahintl. The "handle" or hilt is usually formed by a ball or knob, sometimes by a ring.

⁵¹ H. H. Bancroft (Native Races of the Pacific States of N. America. Vol. II, p. 411). If we have not heretofore quoted, and may perhaps not quote hereafter, this splendid compilation, it is merely because we revert to original authorities, and not at all out of disregard for the highly valuable assemblage of data which the distinguished author has furnished to science.

⁵² Mr. Bancroft has given a fine illustration of a club used by some of the Indians of the present Republic of Mexico. But among the Mexicans proper, the sword, "maccuahuitl," was the most common and frequently used weapon. Clavigero figures it like the blade of a saw-fish, with teeth; and Tezozomoc calls it "espadarte." But there can be no doubt that the intention of the Indians was to make a *continuous blade* (or edge), and not a *row of teeth*. (Along the sea-coast the "proboscis" of the saw-fish may have been used *occasionally as a weapon*, but it certainly never furnished a *type*.) The Peruvian "chumpi" was a peculiar weapon, and has nothing analogous elsewhere on this continent. It required both hands to wield it. An illustration of it is found in Herrera, Frontispiece to the fifth Decade, where the portraits of thirteen Yncas are given. Both Manco-Capac and Viracocha each hold a "chumpi" or spear terminating in a broad star, like the "Morgenstern" of the Swiss. Some authors persist in giving to the Mexican sword the name of "macana," but this word is not Mexican. Neither is it Carib. It was imported from the Antilles by the Spaniards, and is probably "arua." Von Tschudi "Peru, Reise-skizzen" (St. Gall, 1846) describes, vol. 2, chap. 7, p. 231, the macana still in use among the wild Indians of the Peruvian "Montañas," East of the Andes. He says: "the sword, macana, is also, like the bow, made out of the hard chunta. This wood is dark brown, very hard and heavy. The macana is four feet long, one inch thick, and five to six inches broad; at the handle it is only three inches wide and rounded, both edges are as sharp as those of a sabre." The same author describes also the club, "matusino," of the same tribes. It is a rough imitation of the "chumpi" of the Incas, deer-prongs taking the places of the metallic star. Its length is about four to five feet. Durán also has drawings of a Mexican club, corresponding to the figure given by Mr. H. H. Bancroft.

⁵³ These shields, richly ornamented with featherwork, were used at great festivals, at the dances. Illustrations are given in Herrera, Frontispiece to the second Decade, in Clavigero, and especially in the "Raccolta di Mendoza," printed in Lord Kingsborough. They were frequently sent as presents, and among the presents which Cortés received while at Vera-Cruz, Gomara mentions once twenty-four, and again five, of such shields. "Cinco rodela de pluma y plata," and "veinte y cuatro rodela de oro y pluma y aljofar, vistosos y de mucho primor" (Vedia I, p. 322). He distinguishes them from the war-shield which he describes as "una rodela de palo y cuero, y a la re- donda campanilla de laton morisco, y la capa de una plancha de oro, esculpida en ella Vitellopuchtlí, dios de las batallas, y en aspa cuatro cabezas con su pluma é polo, al vivo y desollado, que eran de leon, de tigre, de aquila, y de un buarro."

round, small, "target," worn by the "brave" on his left arm and made of "canes netted together and interwoven with cotton 'two-fold,' covered on the outside with gilded boards and with feathers, and so strong that a hard cross-bow shot could alone penetrate them"54

With this shield they warded off blows in close combat,⁵⁵ and even arrows and darts at full speed. Each warrior probably carried his own shield, although it is sometimes stated that the archers, while shooting, were shielded by others.⁵⁶ This, however, would necessarily imply a greater progress of the military art among the Mexicans than we may safely allow.

The remainder of the protective armour of the Mexicans is intimately connected with their *costume*.

The ordinary dress of a Mexican consisted of a sleeveless jacket ("huepil") fastened on the right shoulder, and of the breechcloth ("maxlatl"). The head, arms, and legs from the knees downwards, were bare. A mantle, short among the common Indians, longer among the chiefs, completed the costume.⁵⁷ Sometimes they went to war without any other protection, but in most cases the warrior wore a frock of quilted cotton, about three-quarters of

⁵⁴ The "anonymous conqueror" (Col. de Doc., Vol. I, p. 373). Compare Torquemada (Lib. IV, cap. XXXI, p. 423), and Clavigero (Lib. VII, cap. XXIII).

⁵⁵ See the description of a single combat between a Cempoaltecan and Tlaxcaltecan (Herrera, Dec. II, lib. VI, cap. VI, p. 143, and Torquemada, Lib. IV, cap. XXXI, p. 423).

⁵⁶ Clavigero (Lib. VII, cap. XXIII) and the anonymous conqueror both assert, that each warrior had a shield. But Fray G. de Mendieta is still more positive (Lib. II, cap. XXVI, p. 130): "Tras estos llegaban los golpes de espada y rodela, con los cuales iban arrojados los de arco y flecha, y allí gastaban su almacen." However, Fray Diego Durán says: (Cap. XIV, p. 121) "y llegados á un lugar que llaman Tecuitlatenco, hicieron alto y esperaron la armada de Mexico que venian por la laguna, que eran mill canoas, muy bien aderezadas de gente y pañeses con gran numero de flagas y varas arrojadas, flechas y rodela y de hombres para defensa de los flecheros, los quales estan tan diestros en desviar flechas con las rodela, que era espanto, porque en viéndola venir, luego la daban con la rodela que la echaban á través." This seems to indicate that there were special men detailed to protect the archers, and therefore a division into different arms, although there is no other evidence of such a fact. It may have been the case here, since the fight (against Cuiclahuac) was to take place on water chiefly, but nowhere else do we meet a division into kinds of arms, like archers, spearmen, swordsmen, etc., etc. All Mexican warriors were armed as nearly alike as possible. The Anonymous Conqueror, after mentioning the different weapons, says: "y molti, ò la maggior parti di esse portano tutte queste sorti di armi con che combattono." ("Relatione, etc.," in Vol. I. of Col. de Doc., p. 374.)

⁵⁷ Gomara (Conquista de Méjico. Vedia, Tom. I. p. 440. "Calzan unos zapatos como alpargates, pannicos por bragas. Visten una manta quadrada, añudada al hombro derecho como gitanas"). The Anonymous Conqueror (p. 376. "La manera del vestire de gli huomini"). Texozomoc (Crónica, Cap. XXXVI, p. 58. "the macehuales of lower grade, wore short mantles, plain, of cotton or nequen"). The "maxlatl" is described by the Anonymous Conqueror as follows: "a towel, like unto a sheet

an inch thick, up to one and one-half inches, and therefore strong enough to resist an arrow-shot, or even the dart at long range. This was the cotton-armour subsequently adopted by the Spaniards under the name of "Escaupil" ("Ichcahuipilli").⁵⁸ Sometimes even the limbs were encased in such quilted armour,⁵⁹ and the outside of the "ichcahuipil" was adorned with feathers and plates of gold or silver. The feet were protected by leather soles or moccasin-like shoes ("cactli," "cotaras"), but the use of them was not general.⁶⁰ Warriors of merit especially, inserted their heads

"worn over the head while travelling, of various colors, and variously adorned, with the ends hanging downwards, one in front and the other behind." It was common to the aborigines of Mexico and Central America, and is represented on the sculptures of Palenqué, of Copan, and of Chichen-Itza. The tables of Durán give, perhaps, the most reliable picture of these costumes.

⁵⁸ "Ichcahuipilli" derives from "Ichcatl," cotton, and "huepil," jacket. Alvarado, in his second letter to Cortés, dated 28 July, 1524 (Vedia. Vol. I), mentions an ichcahuipil used by Indians of Guatemala, which was three inches thick and reached as far down as the ankle: "porque venian tan armados, que el que caia en el suelo no se podia levantar; y con sus armas coseletes de tres dedos de algodón, y hasta en los pies. . . ." (p. 402.)

⁵⁹ There are several representations of such protection of the thighs, and also of the arms, especially in the splendid work of Lord Kingsborough, taken from the Mendoza codex. The entire costume, from the neck to the knee, seems to be of one piece. We have no accurate description, however, of them. It is doubtful whether they terminated into upper "leggings," or whether into a frock-like continuation, reaching from the girdle to the knee. Perhaps both; at least there are traces of both. (Anonymous Conqueror, p. 374. Clavigero, Lib. VII, cap. XXIII.) The absence of the "Ichcahuipil" was not, however, always a sign of low rank. Some warriors of particular merit even went to war almost naked (See Humboldt, "Vues de Cordillères," Tab. XIV, fig. 4), and Herrera (Dec. II, cap. XXI, p. 287, speaking of the natives of Tepeaca, who were subject to Mexico: "and the most valliant ones went only in breech-cloth, painting their naked body black and red"). There was, consequently, no absolute uniformity and uniform distinction in dress and armament, and this was still increased by the variety of customs among the numerous tribes which assisted the Mexicans in war, each tribe having its own manner of dress, and keeping separate on the battlefield. A Mexican army must have been a rather strange, motley crowd. Still there was, in all probability, less variety than among the Peruvian warlike bodies. Of the latter's variegated array the report of Francisco de Xeres, secretary of Pizarro, gives a good illustration (Vedia, vol. II).

⁶⁰ "Cactli," corrupted into "catle," is rendered by Molina (II, p. 11) as "shoes, or sandals." Torquemada says (Lib. IV, cap. XVI, p. 450, vol. I): "the King wore golden shoes, which they call cactles, and are after the fashion of those of the ancient Romans, adorned with much jewelry, the soles fastened with cords." (Idem: Lib. XI, cap. XXX, p. 365) "they gave to him cotaras or sandals . . ." Gomara (Conquista, etc., p. 322), in the list of presents sent by Cortés to the Emperor, mentions: "many shoes like as of grass, made of deer-hides, some with golden thread, and the soles of certain white and blue stones . . .," "other shoes, six pairs, of leather of different color, adorned with gold or silver or pearls." The question is, whether they were moccasins or sandals. The sculptures of Palenqué show an approach to either. Durán (Cap. XXVI, p. 214), in speaking of the distinctions of dress, says: "And thus it was ordained, first: that the Kings should not appear in public, except in urgent cases; that the King alone might wear a crown in the city, but that in war all the great chiefs and valliant captains might wear crowns also, and royal tokens

into wooden forms, intermediate between masks and helmets, imitating heads of ferocious beasts like tigers, lions, wolves, also snakes, and covered with the skins of these animals.⁶¹ The principal captains and war-chiefs were distinguished by their wide and long mantles,⁶² by the cut and tress of their hair,⁶³ and by towering bushes of green feathers on the so-called "helmets" protecting the head.⁶⁴

"It was ordained that the King and his coadjutor, Tlacaelel, should alone wear shoes "in the royal house, and that none of the great chiefs might enter the palace with shoes "on, under penalty of death; and they alone could wear shoes in the city, except those "who had distinguished themselves in war, which for their merit, and in token of their "bravery, were permitted to wear light and common sandals, because the gilded and "painted ones belonged to the great chiefs alone." We would suggest that the "cactli" or "cotaras" were half-moccasins, similar to slippers. It is not devoid of interest to notice here, that even the wearing of these articles depended upon actual merit and reputation *achieved in war*, and not upon wealth or inheritance. War was, indeed, "the life of the tribe."

⁶¹ Anonymous Conqueror (Col. de Doc., I, p. 372). Clavigero (Lib. VII, cap. XXIII). Drawings are found in Clavigero, in the Mendoza Codex, as published by Lord Kingsborough, and in the frontispiece to the 2d Decade of Herrera (Vol. I). It may be that the honorific titles of "daring lions, tigers, and eagles," which have greatly contributed to the supposition of the existence of "military orders," or "orders of chivalry," were based upon the wearing of such costumes by the braves. As already stated, not all the warriors carried such masks or helmets, but our data are too imperfect to enable us to state positively the class or standing of those who wore them.

⁶² Durán (Cap. XXVI, p. 215). "También se determinó que solo el rey pudiese traer "las mantas galanas de labores y pinturas de algodón y hilo de diversas colores y plumería, doradas y labradas con diuersas labores y pinturas y diferenciallas quando á "él le paréciese, sin aver excepcion en traer y usar las mantas quel quisiere; y los "grandes señores, que eran hasta doce, las mantas de tal y tal labor y hechura, y los "de menos valía, como viese hecha tal ó tal valencia ó haçaña, otras diferentes; los "soldados, de otra menor labor y hechura, no pudiendo usar de otra preciosa labor ni "diferencia, mas de aquella que allí se le señalaba con sus ceñidores y bragueros, que "aludían y seguían la hechura de la manta que le era permitida. Toda la demás gente, "so pena de la vida, salió determinado que ninguno usase de algodón ni se pudiese "otra manta sino de neguen, y questeas mantas no pasasen mas de quantos cubriesen la "rodilla, y si alguno la trujese que llegase á la garganta del pié, fue e muerto, salvo si "no tuviese alguna sennal en las piernas de herida que en la guerra le viesesen dado, "" Also Tezozomoc (Cap. XXXVI, p. 58). Here again we find the kind and cut of the mantle, its ornaments determined by the warlike achievements of its bearer.

⁶³ Tezozomoc (Cap. XXXVI, p. 57). Humboldt ("Vues des Cordillères," Vol. I, p. 845). The figure of the Atlas in folio is taken from the Codex Anonymous of the Vatican. Says the Anonymous Conqueror: "To him who distinguished himself in war "they made a mark in the hair, that his prowess might be recognized and seen at once, "since they never wore the head covered" (p. 371). Braids or tresses of hair as well as of leather, were sometimes given as presents, and worn. Tezozomoc mentions them frequently, under different names.

⁶⁴ The head-dress, or "divisa."—"tlauitzli," or "quetzalpatzacitli," is represented on nearly every Mexican painting or picture-leaf. It is also represented on the stone of sacrifice, as adorning the victorious warrior of each group. Its size is generally exaggerated. Gomara (p. 322, Vedia, I) includes in his list of objects sent by Cortés to the Emperor: "a helmet of wood, gold-plated, with jewels in front or outside, and twenty-five little golden bells, and its crest of a green bird, whose eyes, beak, and feet were

While we shall, further on, have occasion to recur again to the question of military costume and ornaments; when we treat of the different grades of warriors and captains, it remains to be said here that *featherwork*, worn as a *layer* over the "escaupil," played a prominent part in the Mexican armour.⁶⁵ It formed an elastic layer on the outside of the quilted jacket, and besides it furnished, through an assemblage of colors peculiar to each sub-division of the force, the "uniform," or, as the Spanish authors call it, the "livery," of that particular sub-division. The Anonymous Conqueror says: "They cover their jackets and breeches "with feathers of various hues, presenting a very good appearance; one company of soldiers has them white and red, others "blue and yellow, and others wear them still different."⁶⁶ Bernal-Diez mentions that while fighting on the causeways during the siege of Mexico: "in the morning many captaincies (detachments) would attack us, relieving each other from time to time; "some had one livery and ensign, others had other ones."⁶⁷ Such of the warriors as were but scantily clothed painted their naked bodies.⁶⁸

"of gold." Tezozomoc (Cap. LIV, p. 88) gives the following description of the figure of Axayaca, carved out of the rock of Chapultepec, "with hair of precious feathers, "painted of the colors of the bird tlauhquechol . . ." The bird whose plumage furnished the material was called "quetzal-tototl." It is "*Trogon resplendens*." (See "San Salvador and Honduras im Jahre 1571," a German translation of the report of Diego Garcia de Palacio, by Dr. A. von Frantzius, of Freiburg, ib.—p. 39, No. 61 note. The notes by the learned translator, as also those of Dr. Berendt, are highly valuable.) The "tlauhquechol" was also used.

⁶⁵ Prescott (History of the Conquest of Mexico, 1869, Book I, chap. II, pp. 45, 46, and 47, of Vol. I).

⁶⁶ (El Conquistador anónimo) Col. de Doc., Vol. I, p. 372.

⁶⁷ "Historia verdadera de la Conquista de Nueva-España" (Cap. CLIII, p. 188, in vol. II, of Vedia).

⁶⁸ It is presumable that the colors were those of the detachments to which the warriors belonged. At any rate, it shows that the Mexicans, like the northern Indians, had a special "war-paint." Those of Tepeaca, their allies or subjects, used black and red (Herrera, Dec. II, cap. XXI, p. 287, of Lib. X). Clavigero says (Lib. VII, cap. XXIII): "The common soldiers were naked with the exception of the girdle (maxtlatl), but they "sought to imitate the dress which they lacked, by painting their bodies with various "colors." Further on he adds (Cap. XXIV): "Besides the common flag of the army "each company of two or three hundred men had its own banner, and was, besides, "distinguished by the color of the plumage, which the officers and nobles wore over "their armour." Although this is no direct evidence of the fact, still it tends to intimate that the paint used by the common warriors was in imitation of the featherwork peculiar to their corps. They also painted their faces previous to an engagement: sometimes black. Tezozomoc relates that, on one occasion, Ahuitzotl painted his face yellow ("con un betun amarillo"). His armour was blue (Durán, Cap. XLVI, pp. 371 and 372, "tiznándose las caras con la tizne divina, aquellos así llamauan, y el rey Ahuitzotl vestido de ricas mantas, y debaxo muy bien armado con sus armas aqúelas . . .")

Almost insensibly we have here abandoned the field of the armament of the Mexicans, entering, nay, trespassing, upon that of their *military organization*.

This organization is but imperfectly known to us.⁶⁹ Still, its knowledge is of the highest importance, since, with a tribe as essentially warlike as the Mexicans, military institutions are often blended with those of civil life, and we may presume that the same principle pervades both; that the degree of development of the one gives a clue to that of the other. According as we picture to ourselves the condition of ancient Mexican society, we shall view and judge their military organization.

All the older authors upon Mexico; and they have been implicitly followed by the great mass of subsequent writers, describe to us a Mexican empire, with an hereditary nobility and an *elective* despot at its head. This autocrat was not only absolute civil chief, he was also Judge and military commander. He declared peace and war, directed the forces, he nominated and deposed officers at his pleasure. Some restraints are allowed, occasionally, to have existed, upon such a power analogous only to that of the despots of Asia, but even the most distinguished writers of *modern* times have unhesitatingly accepted the picture of an absolute Indian monarchy in Mexico.⁶⁹

Still this picture, however tempting and fascinating, to imagination especially, has not always satisfied the student's mind. Without placing much stress on the clumsy attacks of James Adair⁷⁰ upon the Spanish authors on Mexico, or on De Pauw's injudicious "Researches,"⁷¹ we meet, however, with an earnest and careful criticism in Robertson's classical work. While the great

⁶⁹A. de Humboldt ("Essai politique sur la Nouvelle Espagne," 1825, Lib. II, chap. VI, p. 374, "Leur système de féodalité, leur hiérarchie civile et militaire se trouvant dès "lors si compliqués, qu'il faut supposer une longue suite, d'événements politiques pour "que l'enchaînement singulier des autorités de la noblesse et du clergé ait pu s'établir; "et pour qu'une petite portion du peuple, esclave elle-même du sultan Méxicaïn, ait "pu subjuguer la grande masse de la nation"). W. H. Prescott ("History of the Conquest of Mexico," Book I, chapter II, p. 23. Book II, chapter VI, p. 312). Brasseur de Bourbourg ("Histoire des Nations civilisées du Mexique et de l'Amérique Centrale"), and H. H. Bancroft (Native Races of the Pacific States"). I quote but the most prominent writers on Mexico of this (19th) century.

⁷⁰James Adair ("History of the American Indians," London, 1775).

⁷¹"Recherches philosophiques sur les Américains," a very injudicious book, which, by its extravagance and audacity, created a great deal of harm. It permitted Clavigero to attack even Robertson, because the latter had also applied sound criticism to the study of American aboriginal history, and by artfully placing both as upon the same platform, to counteract much of the good effects of Robertson's work.

historian admits and acknowledges whatever appears to him as true and sound in the works of his predecessors, he still takes a different view of the condition of the Mexican aborigines, and indicates, so to say, an entirely new path.⁷³ It has been the work of the distinguished American ethnologist, Lewis H. Morgan, to open this path fully.⁷³

But whereas it is very easy and plain to trace the institutions of the aborigines where they are still in vigor, it is extremely difficult to obtain anything like a clear conception thereof in Mexico, since, as we have already stated, those institutions are gone like their architectural remains, and the other sources for a knowledge thereof are often diffuse, and conflicting in their accounts. Moreover, all the older authorities on Spanish America are under the influence of eastern (European or Asiatic) ideas, whatever appeared to them strange or new in America they compared with what they thought might be analogous to it among nations of the Old World.⁷⁴ What, in their first process of thinking was merely a *comparative* became very soon a *positive, terminology*, for the

⁷³ "History of America" (9th edition, 1800. Vol. III, book VII, p. 274). "The Mexicans and Peruvians, without knowledge of the useful metals, or the aid of domestic animals, laboured under disadvantages which must have greatly retarded their progress, and in their highest state of improvement their power was so limited, and their operations so feeble, that they can hardly be considered as having advanced beyond 'the infancy of civil life.' If the first part of this quotation is evidently incorrect, since the Mexicans used copper, silver, and gold, even tin, perhaps, and the Peruvians made alloys;—the latter portion of it is undoubtedly true. He further sustains it by the following remark (Id. p. 281): 'The infancy of nations is so long, and, even when every circumstance is favourable to their progress, they advance so slowly towards any maturity of strength or policy, that the recent origin of the Mexicans seems to be a strong presumption of some exaggeration, in the splendid descriptions which have been given of their government and manners.' Notwithstanding those very clear and judicious remarks, Robertson has, though reluctantly, bowed to the admission of feudalism, and of feudal monarchy in Mexico (Id. p. 292).

⁷³ See "Systems of Consanguinity and Affinity of the Human Family," Smithsonian Contributions to Knowledge, Chapter VI, p. 488, "The communal family." Also, "Montezuma's Dinner," in the "North American Review," April, 1876. The learned author has made a bold stroke for the establishment of American ethnology on a new basis.

⁷⁴ "Montezuma's Dinner," p. 267. "All the grand terminology of the Old World, created under despotic and monarchical institutions during several thousand years of civilization, to decorate particular men and classes of men, has been lavished by our author with American prodigality upon plain Indian sachems and war-chiefs, without perceiving that thereby the poor Indian was grievously wronged, for he had not invented such institutions nor formed such a society as these terms imply." Mr. Morgan, to whose kindness and friendly protection I am so largely indebted, will not misunderstand it if I say here, that while his criticism of the current of ideas running through all the sources in ancient Mexico appears to me the most true and logical one, his remarks upon the writers themselves are not always justified. This observation, from one whom he has honored by becoming his guide and teacher, will, we trust, be regarded in a kindly spirit.

purpose of describing institutions to which this foreign terminology never was adapted. It is this expedient, invented in order to become *understood abroad*, and because there were no other points of comparison given by science at that time, which opposes the greatest difficulties to the study of American antiquities. This obstacle may, to a certain extent, be overcome by establishing the true signification of the *native term* for every institution considered, for every office, as far as this is possible; using *native terminology* as indicative of the true character of *native life*. This course we shall attempt to pursue, in treating the military organization of the Mexicans.⁷⁵

The tribe of Mexico had, soon after its settlement in the marsh where the pueblo was subsequently built up, divided into four sections, or "quarters" ("calpulli"),⁷⁶ each of these being composed of certain clusters of kindred, "minor quarters," as Torquemada call them.⁷⁷ The four great quarters remained as the principal sub-divisions of the tribe for civil as well as military purposes, and the armed men of each constituted a separate body, regardless of

⁷⁵ Thus the Mexican word for tribe, town, and settlement is the same: "altepetl," but the Spaniards have applied it to king also (Molina, II, p. 4). The name "tlatolani," which the Mexicans gave to their principal chiefs, and which is translated into king, signifies "one who speaks" ("hablador," Molina, II, p. 141), from "nitlatol," to speak ("tlatolli," speech). The council was called "tlatocan," "place of speech," but Molina translates it as "court or palace of great lords." The term "speech," or, rather, the verb "to speak," is found in a number of native terms, like "tlatoca-icpalli," "seat of the one who speaks," which has been rendered, also, as "throne." There is certainly no approach to a royal title in all this. The so-called "King" was only "one of those who spoke;" a prominent member of the council. A court of justice, "audiencia," was also "tecuitlatoloyan," or "chiefs who are speaking, or bowing their heads."

⁷⁶ Durán (Cap. V, p. 42). Acosta (Lib. VII, cap. VII, p. 467). Tezozomoc (Cap. III, p. 9). Herrera (Dec. III, lib. II, cap. II, p. 61). "Popol Vuh," Introduction, p. 117, note No. 1, by Mr. Brasseur de Bourbourg, "Enfin, presque toutes les villes ou tribus sont partagées en quatre clans ou quartiers, dont les chefs forment le grand conseil." Tlatilulco, which was conquered by the Mexicans in 1473, subsequently formed a fifth "quarter." The names of the four original ones were: "Teopan" (place of God). "Aztacalco" (house of the heron), "Moyotlan" (place of the musquito), and "cuepopan." They subsequently formed, under Spanish rule, the *wards* of San Pablo, San Juan, Santa Maria la Redonda, and San Sebastian. Tlatilulco became the "Indian-ward," and was called Santiago.

⁷⁷ (Lib. XIV, cap. VII, p. 545) " . . . y así estaba ordenado, que en cada pueblo, conforme tenia el numero, y cantidad de gente, huviese parcialidades de diversas gentes, y familias. . . . Estas Parcialidades estaban repartidas por Calpules, que son Barrios, y sucedia, que una Parcialidad de estas dichas tenia tres, y quatro, y mas, Calpules, conforme la gente tenia el pueblo," Durán (Cap. V, p. 42) is more explicit, even. After having stated that the Mexicans divided into four principal quarters, he says: "their god commanded them that they should distribute among themselves the gods, and that each quarter should name and designate particular quarters where these gods would be worshipped; and thus each quarter divided into

numbers.⁷⁸ They in turn subdivided into squads of from two to four hundred warriors each,⁷⁹ being, in all probability, the able-bodied males (priests excepted in many cases) of one particular "kin."⁸⁰ These lesser bodies had each their own peculiar "livery,"⁸¹ they carried their own emblem, visible, like a banner, "high above the troop," and finally they disaggregated into fractions of about twenty men.⁸² On the eve of an engagement a further sub-division, into groups of four to six, took place, as we shall hereafter see.

Having thus sketched, as far as we can, the *division or arrangement* of the Mexican forces, we have yet to investigate how, and by whom, the warriors of the tribe were commanded, how those leaders obtained their offices, and what was the order of their rank and dignity. But here we must premise: *that no office whatever,*

many small ones, according to the number of idols, which they called Calpuliteona" (should be "Calpulteotzin"). But their division into at least seven such "barrios," or kindred groups, existed already before this event (Tezozomoc, Cap. I, p. 6. Durán, Cap. III, p. 20). "Rapport sur les différentes classes de Chefs de la Nouvelle-Espagne," par Alonzo de Zurita. French translation by Mr. Ternaux-compans. This important authority, among other statements, makes the striking remark: "Finally, what is called 'in New-Spain a calpulli corresponds to what the Jews called a tribe'" (p. 53).

⁷⁸ Tezozomoc (Cap. XCI, p. 161). When, under the last Montezuma, the fight against Huexotzinco was begun "Cuauhnocli took charge to assemble together the four leaders of the four quarters for that the arms might be held in readiness."

⁷⁹ Anonymous Conqueror (p. 371). Clavigero (Lib. VII, cap. XXIV).

⁸⁰ These bodies of two to four hundred men are those mentioned by Durán (Cap. XIX, p. 169) as "cuadrillas," "escadrones," carrying each the "emblem" ("bandera") of its "quarter" ("barrio"). In this case he refers to the "minor quarters." See note No. 82, below.

⁸¹ "Anonymous Conqueror;" also, Bernal-Diez, quoted in text, above.

⁸² Anon. Conqueror (p. 371), "ha ogni compagnia il suo Alfiere con la sua insegna" "inhabitata, en tal modo ligata sopra le spalle, che non gli da alcun disturbo di poter combattere ni far cioche vuole, y la porta cosi ligata bene al corpo, che se non fanno del suo corpo pezzi, non se gli puo sligare, ne torglielamai." Clavigero says (Cap. XXIV, lib. VII): "The banners were more like the 'signi' of the Romans than our 'flags.' The following paragraph of Durán makes it plain that they represented the token of each original body of kindred: "After having eaten, the captains said to their 'people: behold, men, that being intermingled with the enemy, some of you might lose sight of his squadron, therefore Tlacnelc ordains that of each quarter there shall be an emblem, carried high above the troop, with the arms of such quarter on it, and that all shall be careful to rally around that banner and flag, and that, besides, they should call out the names of their respective quarter, so as to be known" (Cap. XIX, p. 169). We have ample descriptions of the emblems of the four quarters of Tlaxcalan, but none of those of Mexico. It is doubtful if there was a national emblem, or central ensign. The statement, that the capture of that central "emblem" decided the fate of the battle, is also very doubtful, notwithstanding Bernal-Diez' pompous description of the fight near Otumpan. See hereafter. It may not be devoid of interest to note here that the Mexican sign for the number *twenty* (20,— "pohuailli") was a *flag*. Still, the name for the latter was "quachpanitl," from "quachtli," mantle, and "panl," above.

no kind of dignity, was, among the Mexicans, transmissible by inheritance. Merit alone, on the battlefield, could promote to the rank of war-chief, by inducing and influencing the elections held for that purpose.⁸³ The civil-chief ("Tecutli," from "Tecu," grandfather) secured his office through rigorous religious observances and age.⁸⁴ There was no nobility of any kind at Mexico, the chief being chief only as long as he was by his constituents deemed worthy of that position.⁸⁵

Above the common warrior ("yaoquizqui") there were two classes of superiors: the distinguished braves, and the war-chiefs proper.

Of the distinguished and meritorious braves, which had not, however, attained the chieftainship, we know three different kinds: the "fierce cutters," or "beasts of prey" ("Tequihua"), the "strong eagles," or "old eagles" ("Cuachic," or "Cuachimec"), and the "wandering arrows" ("Otomitl").⁸⁶ These titles were merely honorific, and could be obtained exclusively through the capture, in actual combat, of one or more prisoners. In token of these dignities the hair of the head was cropped closely over the ear; they wore, chiefly, but not exclusively, the masks or helmets

⁸³ Anonymous Conqueror (p. 371) "They used to reward highly those who distinguished themselves in war by any valorous action, for even if he was the vilest slave, they made him captain and lord, and gave to him slaves, and esteemed him so much, that wherever he went they attended to him and paid him such regards as if he had been the chief himself."

⁸⁴ Mendieta (Lib. II, caps. XXXVIII and XXXIX). Ternaux-Compans ("Recueil de Pièces, etc.," "Des cérémonies observées antrefois par les Indiens lorsqu'ils faisaient un teclé." Zurita ("Rapport, etc.," p. 47). "The chiefs who, as we have said, were called Tec Teutzcin, or Teutley, held their office only during life-time." (p. 49.) "If one of them died, the prince gave the office to one who had proven himself worthy of it, for the sons of the deceased did not inherit of his dignity, unless they had been invested with it."

⁸⁵ See, further on, the case of the last Montezuma.

⁸⁶ These definitions we give for what they may be worth, without in the least insisting upon their absolute correctness. "Tequihua" may derive from "nitla-tequi," to cut, or from "tequani," wild beast. "Cuachic," from "quauhiti," eagle, and "chicac-tic," an old man, or a strong object, or, also (though this is hardly probable), "chimali," shield. "Otomitl" probably derives from "N. otoca," to travel, and "mitl," arrow. But this was also the name given to the "Otomies," a well-known savage tribe, expert hunters, found scattered over Mexico, among or around the sedentary Indians. It looks strange for the Mexicans to give to one of their meritorious braves the title of a wandering horde, far below the Mexicans in culture. But the Otomies were good hunters, skilled in the use of the bow, and it is therefore likely that they were named thus by the Mexicans themselves, and that their name is not, as Mr. Brasseur de Bourbourg intimates, derived from a supposed god, "Odon," or "Oton" ("Popol Vuh," Introd., pp. 76 and 110). The Otomi word for God was "Oqhá," their word for man, "na nyéké" ("Grammatica ragionata della Lingua Otomi," of Count Piccolomini, Rome, 1841, after Neve y Molina).

imitating wild animals' heads, and sometimes even the skins of those animals.⁸⁷ Their post was in the van of the army, as scouts and skirmishers, but they also acted as leaders of smaller bodies, like four to twenty men, and even larger subdivisions, at the option of their superiors.⁸⁸

Neither of the above three grades could be obtained through appointment or election; every warrior became entitled, as soon as he had accomplished certain feats in war, to one or the other thereof.⁸⁹

⁸⁷ Tezozomoc (Cap. XCVI, p. 171). After the successful raid of the Mexicans against Tuctepec (under the last Montezuma) it was found that 200 of the "tequihua" had made prisoners, and that an equal number were made "tequihua." "Anonymous Conqueror" (p. 373.) "To him who thus distinguished himself they made a mark, by a "peculiar cut of the hair, that he might be known for his deeds, and that everybody "might see it, since they did not accustom to wear the head covered. Every time that "he accomplished another notable action they put another similar mark on him . . ." See also Torquemada (Lib. XIV, cap. V, p. 543). Durán (Cap. XIX, p. 169) is very positive, too. Clavigero (Lib. XII, cap. XXIII). "The commanders . . . the head "was inserted in a wooden head of a tiger or of a snake, its mouth wide open, and "with large teeth, to appear more frightful."

⁸⁸ Durán (Cap. XXXVII, p. 289). " Aviendo puesto en delantera todos "los soldados viejos y señores y capitanes y todos aquellos que ellos llamaban Cuachic, que eran una orden de caballería que no aula de volver pié atrás ó morir . . . " . . . Tezozomoc says of the "Otomies, Cuachi, and Tequihuasques . . . being "always leaders" ("siendo siempre delanteros." Cap. XXXVIII, p. 80, also, cap. LVII, p. 97). The same author (Cap. XXXVIII, p. 61, and cap. LI, p. 83) affirms that they had to care for the freshmen or young braves (Id., Cap. LXXI, p. 121). The same (Cap. LI, p. 83) says: " . . . and you will, as it is customary, place to every five youths "a Cuachic, to five others an Otomi, then again an Achehuauhtli, and a Tequihua; all "conquerors." This was done immediately before the opening of the engagement. The "Otomitl" is also called by Tezozomoc a "general" occasionally, but this merely shows that, at the option of the war-chiefs, one or the other of the above warriors of merit might be placed at the head of a larger body of men, though he was always considered as of a lower rank. Sahagun (Lib. IX, cap. VI, p. 264). "El hombre ó varon "fuerte llamado Coachic, tiene estas propiedades; es el amparo y muralla de los suyos "etc., etc." Torquemada (Lib. IV, cap. XCIX, p. 565) calls the "Quachicque" bullies ("matasiete").

⁸⁹ By this we wish to say that neither personal favor nor other prominent qualities could procure the titles which we now regard, to any one who had not distinguished himself in war. The titles were conferred immediately after the engagement, or after the return to Mexico. Who conferred them, and what ceremonies, aside from the hair-cutting mentioned, accompanied the act, we are unable to say. The Mexicans were extremely careful to allow each man the prisoner he had taken, and the "penalty for "abstracting a captive to his rightful conqueror was death." Mendieta (Lib. II, cap. XXVII, p. 132). "El que llevaba algun prisionero, si otro se lo hurtaba de día ó de "noche, ó tomaba por fuerza, por el mismo caso moria como cosario ladrón que se "adjudicaba y queria para sí el precio y la honra del otro." The reason for this vigorous chastisement was, not only because the original captor lost thereby his object of sacrifice to the gods, but really more because the thief stole away his rank and title.

Acosta (Lib. VI, cap. XXVI, p. 434). Clavigero (Lib. VII, cap. XXI). Both mention three "military orders," "orders of chivalry." The latter calls them "acheautin," "quauhtin," and "ococelo," translating these terms by "princes," "eagles," and "tigers," respectively. Acosta is not so far from the truth when he asserts that each of

The war-chiefs proper furnished the higher commanders of the Mexicans. We meet with three classes thereof in ascending orders. The chiefs of *kindred*, or *captains*; also chief of the "*minor quarters*." The chiefs of the great subdivisions (*principal quarters*); also mentioned as "captain-generals." The head war-chief of the *tribe*, or so-called "king." All these chiefs were *elected*, and their office was not transmissible by inheritance.⁹⁰

The captains, "commanders of the quarters,"⁹¹ teachers of the young "men,"⁹² properly called "elder brothers"⁹³ ("*teachcauh-tin*," or "*achcacaughtin*," and "*tiacanes*," by corruption), commanded the subdivisions of two to four hundred men each, com-

these subdivisions had its peculiar place of sitting in the official house, or "tecpan" (the "palace" of the older sources. Tecpan derives from "tecuhtli," chief, and "pan," affixum denoting a place), since, at a general council of the tribe (of which this may be an indication), the different grades of warriors would naturally cluster together. But the names given to these three "orders" are erroneous. "*Achcaughtin*" (which, as we shall see, never meant *princes*, for which the Mexicans had no adequate word) was the title of a class of war-chiefs only. "*Quauhtin*" is the "*Cuachic*," "*ocelotl*" evidently the "*tequilhua*." But the last two titles were never used for the higher grades of warriors except in a general way; "*quauhtin-ocelotl*" designated the valorous braves in general (Torquemada, Lib. XI, cap. XXIX, p. 362; lib. XIV, cap. II, p. 537), and corresponds to the "daring eagles, tigers, and lions," as Tezozomoc often calls the three grades now under discussion.

Torquemada, who, notwithstanding his unquestionable credulity, is extremely important on all questions of Mexican antiquities, says (Lib. XIV, cap. V, p. 543): "Los Capitanes tenían por insignia de honra una labor, etc., etc., . . . guarnecidas, con pinturas, e insignias, conforme cada uno havia mostrado el valor, y valentia en las guerras, en que se havia hallado, porque no sacaba otra cosa del peligro de ellas; y así como cosa ganada, por sus propias personas, las estimaban en mucho." Every one had to gain his own rank, merit his own title.

⁹⁰ All these offices were elective, and we shall endeavor to prove it in each particular case.

⁹¹ Ternaux-Compans ("*Recueil de pieces relatives à la conquête du Mexique*." Anonymous MSS. from the Uguina collection, headed "De l'ordre de succession observé par les Indiens relativement à leurs terres et de leurs territoires communaux," p. 225) says: "Les tribunaux de ces officiers étaient établis dans la capitale." Clavigero calls them "princes." Torquemada: "captain of the guards." Sahagun: "old men." Mendieta, even: "chief abbot." This very confusion shows that neither of them paid much attention to the subject, since Sahagun also calls the "*tiacah*" (which is the same as "*achcacaughtin*") "*el hombre valiente*" (Lib. IX, cap. VI, p. 263), and Torquemada the "*achcaughtli*," "*alguacil mayor*." Tezozomoc alone is consistent with himself, in mentioning the "*achcacaughtin*," frequently, as *leaders in the fight*, commanding the three grades of distinguished braves (Cap. XXXVIII). He is confirmed by Molina (I, p. 25), who translates "*teachcaughtin*" as "*capitan de gente*." Tezozomoc further calls them: "principals, masters at arms, and of doctrine and example" (Cap. XXXVIII, p. 61), "chiefs of the quarters, masters of the youth" (Cap. LVII).

⁹² Tezozomoc (Cap. XXXVIII and cap. LVII).

⁹³ Molina (II, p. 113), "*tiachcauh*,"—"hermano mayor, y persona, o cosa aventajada, mayor, y mas excelente que otra." Zurita ("*Rapport*," p. 60) calls the "chiefs of the *calpullis*" major parents ("*pariente mayor*"). This corresponds with the definition of Molina.

posed,⁹⁴ as we have seen, of "the able-bodied men (priests excepted) of one particular group of kindred;" said group forming a sub-division of the four principal quarters of Mexico. Besides leading their files in combat, it was their duty when at home, to instruct the youth of their section in the use and practice of arms. They held their office for life, or as long as they gave satisfaction.⁹⁵

As an exterior token of their rank the "captains" wore large ear-rings and lip-pendants of richer material than their predecessors, and carried rods or staffs in their hands when on duty.⁹⁶

A certain number of these captains, corresponding to the "minor quarters" or groups of kindred contained in the principal quarter to which they belonged, were under the direction of the *war-chief*, or as the Spanish authors call him, the "captain-general" of that largest subdivision of the tribe. There were consequently four chiefs of that rank at Mexico,⁹⁷ and it is probable that a fifth one was added to them not long before the conquest, to command the warriors of Tlatilulco.⁹⁸

Beyond the mere facts of their existence, of their being always elected for life-time, and a strong supposition that their titles are given by all authorities, without stating it positively, however, little is known unfortunately, about these chieftains.⁹⁹ They were

⁹⁴ Sahagun (Lib. IX, cap. VI, p. 264). "El maestro de campo o capitán es de esta calidad, que para mostrar su oficio trae coleta, cabellos que cuelga atrás, y bezote y oregeras, y trae siempre sus armas consigo." (The latter is doubtful, *at least*.)

⁹⁵ Durán (Cap. XXVI, p. 216). In regard to their eligibility, see Ternaux-Compans ("Recueil de Pièces," "De l'ordre de succession," p. 225), "Il n'y avait pas d'autres élections d'officiers." Although untrue in regard to the "other officers." Zurita ("Rapport," p. 81). "The election takes place among themselves."

⁹⁶ Durán (Cap. XIX, p. 169), "luego salieron los viejos que tenían oficios de ordenar la gente de guerra, que eran como maestros de campo, con sus bastones en las manos y unas cintas apretadas a la cañeca y unas oregeras de concha, largas, y unas besotes en los labios, muy bien armados, y empezaron a componer la gente." Also, Sahagun (Lib. IX, cap. VI, p. 264).

⁹⁷ Tezozomoc (Cap. XCI, p. 161): "Cuahnoctli took charge to assemble together the four leaders of the four quarters, for that the arms might be ready." The origin of these four titles and dignities dates back to the successful foray against Cuyucan (under Itzcoatl); at least, then they are first mentioned (Tezozomoc: Cap. XV, p. 24, and Durán: Cap. XI, p. 97). As members of the council of chiefs, they appear, however, always as "principal chiefs" only. Tezozomoc being the only one who, to our knowledge, speaks of the "leaders of the four quarters" ("cuatro caudillos de los cuatro barrios").

⁹⁸ Torquemada (Lib. IV, cap. LXX, p. 499) speaks of "Itzquauhtin, señor de Tlatilulco," as companion of Montezuma during the latter's captivity among the Spaniards. He copies from Sahagun (Lib. XII).

⁹⁹ It is a very singular fact that the offices of these four principal war-chiefs should have attracted so little attention, but we may account for it by the prevailing assump-

members of the chief council,¹⁰⁰ and we suggest their titles to have been, respectively: "cutter of men" ("Tlachtecatl"), "man of the house of darts" ("Tlacochealcatl"), "blood-shedder" ("Ezhuahuacatl"), and "chief of the eagle and tuna" ("Cuauhnochtectli," or, abbreviated, "Cuauhnochtli").¹⁰¹ We have no in-

tion of the existence of feudal institutions in Mexico. The divisions were treated as geographical sections only, the sub-divisions by kin were overlooked, and little importance was attached to the fact that every office was filled by election only, and never by appointment. Thus, says Durán (Cap. XI, p. 103), " . . . y así electo uno destos "cuatro. luego ponian otro en su lugar." Acosta (Lib. VI, cap. XXV, p. 441): "Después del rey era el grado de los quatro como principes electores, los quales despues de eligido el Rey, tambien ellos eran eligidos y de ordinario eran hermanos o parientes muy cercanos del Rey." Clavigero says positively (Lib. VII, cap. XXI): "The highest military dignity was that of commanding general of the army. There were four different classes of generals, among which the Tlacochealcatl had the highest rank. Each class had its particular tokens, but we are unable to determine how far the three other classes were subordinate to the first. Neither can we give their names, since the authors differ with each other on the subject. To the generals succeeded the captains, each of which commanded a certain number of soldiers." See, besides, note below.

¹⁰⁰ Durán (Cap. XI, p. 103), after naming the four grades, or rather dignities, proceeds: "A estos quatro señores y ditados, despues de electos principes los hacian del consejo real como presidentes y oydores del consejo supremo sin parecer de los quales ninguna cosa se auia de hacer." Acosta (Lib. VI, cap. XXV, p. 441).

¹⁰¹ "Tlacochealcatl," from "Tlacoche," dart, "calli," house, "tlacatl," man. "Tlachtecatl,"—"tlacatl," man, "tequi," to cut or carve. "Ezhuahuacatl,"—"extli," blood, "uauana," to scratch, "tlacatl," man. "Cuauhnochtectli,"—"cuauhtli," eagle, "nochtli," tuna, "tecuhtli," chief. These four titles, as pertaining to the four principal Mexican chiefs, are given by Durán (Cap. XI, p. 102). Acosta (Lib. VI, cap. XXV, p. 441). Tezozomoc (Cap. XV, p. 24), and Herrera (Dec. III, lib. II, cap. XIX, p. 75), who copies, evidently, Acosta. Tezozomoc says: "All these were like principal caciques and titularies ('señores de título') in the government and command of the Mexican tribe, and after them come the Tlacanes, valorous soldiers, surnamed captains, in their order; . . ." But all those authors substitute "Tlillancalqui," in place of "Cuauhnochtli." Nevertheless, we have ventured to accept "Cuauhnochtli," since "Tlillancalqui" (from "Tliltic," black object, "tlan," affixum denoting place, and "tlacatl," man), man of the black place or black house, denotes a *civil and religious* officer, and not a warrior proper. Durán says: "We must know that there was an idol of blackness, and that of this idol, and of his house, came forth the title for this chief." Acosta affirms positively that the three first named titles were "those of warriors" ("eran de guerreros"). On the other hand, "Cuauhnochtli" is frequently mentioned, both by Tezozomoc and by Durán, as "captain-general," and the bishop of Santo Domingo. Ramírez de Fuenleal, in his letter to Charles V, dated Mexico, 3 Nov., 1532, says: "An officer, called Guamuchil, fills the office of 'alguacil maior'" (Coll. Ternaux-Compans: "Recueil de Pièces relatives à la conquête du Mexique," p. 249). Torquemada, also, after calling "Cuauhnochtli" a "judge," calls him subsequently a chief executioner (Lib. XI, cap. XXV, pp. 353 and 354). Finally, Tezozomoc (Cap. XXXVI, p. 57), after enumerating the principal chieftains of Mexico, "three of which, Cuauhnochtli, Tlachtecatl, and Tlacochealcatl, called Chachi as much as any of the others, and who, for their high valor, had their hair bound behind the occiput with red leather."

The "Chachi" of Tezozomoc are identical with the "Quachictin" of Torquemada (Lib. XIV, cap. V, p. 543), "and one of the highest degrees and honors which could be attained was to be allowed to tie the hair, being the token of great captain, and these were called Quachictin, which was the most honorific title given to captains, a title held

formation regarding the title of the principal war-chief of Tlatlulco, the names given occasionally being personal.¹⁰²

The distinctive mark of these chieftains consisted in having the hair tied behind or above the occiput with a strap of red leather;

"by few only." "Cuauhnocitl," therefore, being "Chachi," or "Quachictin," whereas "Tillancalqui" is but a civil or religious chief, as it is furthermore shown by his being sent as a delegate to Cortés, to the coast (Tezozomoc, Cap. CVII, p. 191). I have ventured to substitute the former as one of the four war-chiefs, each commanding the warriors of one of the four great quarters of Mexico. It may be objected that, aside from Tezozomoc, I have not adduced any other direct proof of the actual existence of these four chieftains. I have already alluded to the probable reason why they are not mentioned as such by the sources of Mexican aboriginal history. Their true position, the nature of their office was simply overlooked. But we know that the tribe of Mexico had divided into four quarters; we know, further, that not only in Mexico, but all over Central America, this same division existed, for civil as well as for military purposes. Each of these four great sections must have had, therefore, its civil, and its military head, and it is but natural to admit, that those heads were the *most distinguished warriors of the tribe*, since *merit, and not descendancy or wealth*, entitled alone to *promotion in rank and office*. Therefore the military chiefs of the four quarters must have been the four "chachi" of Mexico. On the other hand, those four dignities were each elective, and not filled by appointment. But, for an election, there must be electors, and a constituency. We know that the "captains were elected (by the kin which they should command)", and it is but logical to admit that the *four greatest military chiefs* of the tribe were elected to command its *four greatest subdivisions*. Therefore, again, the "chachi" of Tezozomoc must have been the military chiefs of the four quarters of Mexico. Besides, we may ask: Why *four* chiefs, and not any other number? If not that these four principal chieftains corresponded to, and actually represented, a like number of greatest fractions of the whole tribe.

If the older authors observe a certain uniformity in their enumeration of these four chiefs, always beginning with the "Tlacochealcatl," we must not infer from it that one or the other of the four was inferior or superior to the others. They were all alike in rank, although Clavigero (Lib. VII, cap. XXI) places the "Tlacochealcatl" above the others. The very confusion among some of the statements shows that no reliance can be placed upon their assertions in that respect. (Compare, for inst.: Torquemada, Lib. II, cap. LXII, p. 185, with cap. LXV, p. 189, and lib. IV, cap. 13, p. 378.) It results from all these statements, but especially from the positive and consistent assertions of Tezozomoc, that while the four were equal in rank, it still sometimes happened that one or the other, from age or experience, took the superior command according to emergency. Their influence was even decisive, sometimes, with the head war-chief of Mexico himself. See the part played by "Tlacochealcatl" in the attack upon Tlatlulco (Tezozomoc, Cap. XLV, p. 73), and the resolute action of "Tlacochealcatl" in the battle against the Tarasca of Michhuacan, which occurred in 1477, when he compelled Axaynca to retreat before the victorious enemy (Tezozomoc, Cap. LII, p. 84). Also, the assertion of Acosta (Lib. VI, cap. XXV), "without whose consent he could do nothing."

¹⁰² "Itzquauhtin" is mentioned by Torquemada (Vol. IV). This would be "eagle of obsidian," or "flint-eagle." We must always distinguish *personal* names from *titles*. In most cases only the latter were given, and the presumption therefore arises that the *title took the place of the name*. Says my friend Sr. J. M. Melgar y Serrano, of Vera Cruz: "Creo deber aconsejar a V no tome como nombres de las personas muchas 'de las palabras con que estaban designadas, pues eran el que se los daban el título 'del cargo que tenían.'" (Letter under date of 26 January, 1873.)

a distinction reserved exclusively for them and for the head war-chiefs of the Mexican tribe.¹⁰³

Highest in military command, as head war-chief of the Mexican tribe, was the "chief of men" ("Tlaca-tecuhtli"),¹⁰⁴ represented to us as the king or emperor¹⁰⁵ of Mexico. But he was neither a monarch nor an autocrat, nor a despot. Elected out of a certain kin or descendancy¹⁰⁶ for life, but upon the condition of good behaviour, he could be deposed and degraded, should he incur the

¹⁰³ Tezozomoc (Cap. XXXVI, p. 57). Torquemada (Lib. XIV, cap. V, p. 543). Acosta (Lib. VI, cap. XXVI, p. 434). "Los mas preeminentes destos eran, los que tenían "atada la corona del cabello con una cinta colorada, y un plumaje rico, del qual colgan unos ramales hacia las espaldas con unas borlas del mismo al cabo; estas borlas eran tantas en numero, quantas hazañas aua hecho. Desta orden de Caualleros era el mismo Rey tambien, y así se hallaba pintado, con esto genero de plumajes, "y en Chapultepec, donde estan Moteçuma y su hijo esculpidos en unas peñas que son "de ver," Clavigero (Lib. VII, cap. XXI) condenses the statement of Acosta only. Humboldt ("Vues des Cordillères, etc.," Vol. I): "il (Montezuma) a les cheveux "réunis au sommet de la tête, et liés avec un ruban rouge, distinction militaire des princes et des capitaines les plus vaillants." The figure is from the "Codex anonymous," of the Vatican.

¹⁰⁴ This title is given by Tezozomoc, and also by Ramirez de Fuenleal, in Ternaux-Compans ("Recueil de pièces," p. 247): "Mutizuma portait le nom de 'tacatecli,' 'tetuan,' 'jutlacal.'" It is easy to discern "tlacatecuhtli," and "tlatoni,"—of the latter title we shall hereafter speak. Also: "Il existe parmi eux une espèce de chef à "qui ils donnent le nom de tacatecle ou tlatuan."

¹⁰⁵ The Mexican language has no word for emperor (Molina I, p. 51). But Tezozomoc renders the expression "cemanahuac tlatoni" by "emperor of the world." It signifies, however, simply "speaker for what dwells near the water."

¹⁰⁶ The question of succession in office among the Mexicans is a very difficult one. Still, it certainly never descended from father to son, but was always transmitted by election, either to a brother or to a nephew of the former incumbent. The manner of electing the "Tlaca-tecuhtli" of Mexico is very fully described by Sahagun: "When the king or lord died, all the senators, called Tecutlatoces, and the old men of the tribe, called Ahcacaubti, and also the captains and old warriors, called Yautequioques, and other prominent captains in warlike matters, and also the satraps (priests), called Tlenamacaque and Papaonqui,—all these assembled in the royal houses. There they deliberated and determined upon who had to be lord, and chose one of the most noble of the descendancy (lineage) of the past lords, who would be a valiant man, experienced in warlike matters, daring and brave, who should not drink wine, should be prudent and wise, raised in the Calmecac, a good speaker, of good understanding, esteemed and loving. When they agreed upon one, they at once nominated him as lord, but this election was not made by ballot or votes, but, all conferring together, they at last agreed upon the man." Durán (Cap. XI, p. 103), speaking of the four war-chiefs: "y muerto el rey, de aquellos aua de ser electo Rey y no de otros, "y tampoco podian ser puestos en este cargo y ditados sino eran hijos u hermanos de reyes; . . . nunca heredaron los hijos, por via de herencia, los ditados ni los señorios, sino por election." "Y así nunca salia de aquella generacion aquel ditado y señorio, eligiéndolos poco a poco." Acosta (Lib. VI, cap. XXIV, p. 431): "Lo primero en que parece aua sido muy politico el gobierno de Mexicanos, es en el orden que tenían, y guardauan inviolablemente de elegir Rey." Whether we are authorized to go any further than to say that the Tlacatecuhtli had to belong to a certain kin, is very doubtful.

displeasure of the tribe.¹⁰⁷ He was but the commander-in-chief of the Mexican warriors; an office which, among a nation so essentially warlike, was of the highest importance and rank, and which might have procured to the incumbent an influence tending to impair the freedom of its institutions. But there was a wholesome check placed upon such encroachments by the commanding war-chief, through the election of an associate, which carried the singular and strange title of "snake-woman," or "female-snake" ("Cihua-cohuatl") and who, while being more of a civil chieftain, still alternated with him in command, as emergency required.¹⁰⁸ Through this arrangement, the tribe of Mexico became always provided with at least one military head, and if the "chief of men" was out leading a foray, the "Cihua-cohuatl" remained at the pueblo, or vice-versa. The chief command of a campaign, could, besides, be delegated by them to a subordinate leader.¹⁰⁹

We know too little of the office of "Cihua-cohuatl" to enter into any details regarding it. The "chief of men," however, has become famous in history through the last three incumbents of the office,¹¹⁰ It required an extraordinary man, among the tribe, to fill it. He was to be "an earnest and sober man" (says Sahagun), "wise, affable, and a fluent speaker." But especially was he required to be one of the most prominent warriors, who had given proofs of undaunted bravery, ability, and of great circum-

¹⁰⁷ Montezuma was deposed during his life-time, and Cuiclahua was appointed his successor. Bernal-Diez (Vedra II, p. 132, cap. CXXVI): when they spoke to Montezuma they said: "Hacemosos saber que ya hemos levantado á un vuestro primo por señor, . . . y allí le nombró cómo se llamaba, que se decía Coadlauaca, señor "de Iztapalapa, que no fué Guatemuz, el cual desde á dos meses fué señor." Cortés (Note 2 to "Segunda Relacion," p. 42, Vedra I): "Los Indios le mataron por cobarde." Torquemada (Lib. IV, cap. LXVIII, p. 494, and cap. LXX, p. 497). Herrera (Dec. II, lib. X, cap. X, p. 267).

¹⁰⁸ The "Cihua-cohuatl" (from "cihuatl," woman, and "cohuatl," snake) is variously designated as "vice-roy," "captain-general," "supreme judge," "coadjutor of the king," "second king." He was a warrior, too, and during the siege officiated as commander in chief, together with Quauhtemotzin. It results from the statement of Torquemada (Lib. XI, cap. XXV, p. 352) that he was equal to the so-called "king." What the exact functions of this office were, it is not here the place to discuss; it is sufficient for the purpose of this essay, to determine that there were, in all likelihood, two head-chiefs of the Mexican tribe, or two principal war-chiefs, like those of the Iroquois. The "Cihuacohuatl," according to Tezozomoc, was also elective.

¹⁰⁹ Thus we see, sometimes "Tlaochealcatl," then again "Tlaochtecatl," and "Cuauhnocatl," made commanders-in-chief.

¹¹⁰ These were: Montezuma II (Motecuhzuma Xocoyotzin), Cuiclahuatzin, and Quauhtemotzin.

spection.¹¹¹ Therefore, he was always one of the four great war-chiefs of the quarters¹¹² previous to his election, and his war-dress differed in fact but little from that of the latter. As we have already stated, he wore the hair bound up behind the occiput with red leather, and on his helmet or on the bare head a towering bush of green feathers.¹¹³ A long and wide mantle covered his armour, which was otherwise similar to that of the other chiefs.¹¹⁴ But his ear-rings of gold,¹¹⁵ and the green stone-pendant from the bridge of his nose,¹¹⁶ the golden lip-ring,¹¹⁷ his wristbands of featherwork and leather,¹¹⁸ the upper-arm-bands of gold,¹¹⁹ the

¹¹¹ Sahagun (Historia Universal, Lib. II, cap. VI, p. 264): "El capitán general tiene "por su oficio, mandar en la batalla, y dar orden y manera para efectuarla, y concertar "los escuadrones, teniendose por grande agula y leon, y presumiendo de ser victo- "rioso por los buenos aderezos con que va adornado á la guerra á manera de agula, y "dando á entender que su oficio es morir en la guerra por los Suyos." Acosta (Lib. VI, cap. XXIV, p. 431): "Ordinarily they elected young men for their kings, because "the kings always went to war, and it was almost the principal object of this office; "therefore they looked to their being proper to military duty, and fond of it, also." Mendieta (Lib. II, cap. XXVII, p. 132): "Tenían estos naturales en mucho cuando su "señor era esforzado y valiente, porque teniendo tal señor capitán, salían con mucho "ánimo á la guerra." (Idem) "Demás de esto, tenían respeto entre los hijos á aquel "que en las guerras se había mostrado animoso, y á este elegían." Torquemada (Lib. XI, cap. XXVII, p. 357).

¹¹² Durán (Cap. XI, p. 103): "A estos quatro señores y ditados, despues de electos "principes los hacían del consejo real como presidentes y oydores del consejo supremo, "sin parecer de los quales ninguna cosa se auía de hacer, y muerto el rey, de aquellos "auía de ser electo Rey y no de otros." Acosta (Lib. VII, cap. XXV, p. 441): "Todos "estos ditados eran del consejo supremo, . . . ; y muerto el Rey, auía de ser "elegido por Rey, hombre que tuuiesse algun ditado destos quatro."

¹¹³ This distinction was worn by the Indian chiefs of Mexico at least twenty years after the conquest. See, in Vol. II, of Sr. Icazbalceta's "Coleccion de Documentos:" "Relacion de la Jornada que hizo Don Francisco de Sandoval Acaciztli, Cacique y Señor "natural que fué del pueblo de Tlalmanalco, Provincia de Chalco, con el Señor Visorey "Don Antonia de Mendoza, etc., etc." (in 1541). "Don Francisco Acaciztli llevó por "divisa y armas cuando fué á la guerra de los chichimecas, una calavera de plumeria "con sus penachos verdes, una rodela de lo mismo, y en ella un bezote de oro retor- "cido, con su espada y su ichcahuipil, y vestido con un jubon colorado, y sus zara- "guelles, zapatos y borceguies, y un sombrero blanco, y un pañuelo grande con que "se amarraba la cabeza, y un collar de pedreria con dos cadenas" (p. 307). (Idem, p. 255) "Relacion de la Entrada de Nuño de Guzman," by García del Pilar. "Y viéndose "así los señores destas comarcas, que eran Tapiezuela, señor desta ciudad, y el señor "de Tateitlico, y el de Guaxucingo, y el de Tascaltectli, y otros muchos señores y prin- "cipes destas comarcas, le fueron á rogar y suplicar, . . . que se sirviese de "todas sus divisas que eran de oro y de plumas verdes muy galanas, . . ." Also (Relacion de Acaciztli, p. 311. "con su divisa de quetzalpatztlil de plumeria verde").

¹¹⁴ Durán (Cap. XXVI, p. 215).

¹¹⁵ "nacochtli" (Molina, I, p. 91).

¹¹⁶ "Yacaxitlil," from "Yacatl," nose, "xitlil," turquoise, or fine green stone in general.

¹¹⁷ "tentetli," from "tentli," lips, and "tetli," stone.

¹¹⁸ "matzopetzli" (Molina, II, p. 64), "braçaleto."

¹¹⁹ "matemecatli," "braçaleto de oro, o cosa semejante" (Molina, II, p. 53).

golden tubes enclosing his ankles,¹²⁰—they were all of a more elaborate workmanship, and only he and the “Cihua-cohuatl” were entitled to wear them thus.¹²¹

But the distinctive mark of either of them on the field of battle was a long tress or braid of featherwork (the “Quachiatli”) hanging down from the occiput to the waist or girdle.¹²² Besides, they carried a small drum, on which they gave signals to their men.¹²³

A very fair representation of this costume, especially of the characteristic headdress, is found at Palenqué, in the beautiful figures on the bas-reliefs of the “altar,” and “tablet of the cross.” These tablets and figures show, in dress, such a striking analogy with what we know of the military accoutrements of the Mexicans, that it is a strong approach to identity.¹²⁴

¹²⁰ “Cozcatl,” or “cozcapetlatl,” or “cozehuatl.” “Cozcatl” is a jewel, or a chain, or a collar, hung with precious stones.

¹²¹ The “king” and the “cihuacohuatl” both wore the same dress and ornaments. Durán (Cap. XXVI, p. 215): “Ordénose que solo el rey y su coadjutor Tlacacel pudiesen traer capatos en la casa Real” (p. 216). “Iten, que solo el rey, y los reyes de las provincias y grandes señores pudiesen usar de brazaletes de oro y de calcetas de oro en las gargantas de los pies, y ponerse en los pies cascabeles de oro à pies y guirnaldas y cintas de oro a la caueça con plumeria.” Every Mexican tribe had this duality of the chief military office, as Tezozomoc distinctly states. Besides, it appears also distinctly in Central America. The “Popol-Vuh” mentions “Hun-Camé” and “Vucub-Camé” as the two chiefs of “Xibalba.” (Part II, cap. I, p. 173) “Then they all took advice together, and these: ‘Hun-Camé’ and ‘Vucub-Camé,’ are the chief judges.” (Also, Cap. LXII.) See Herrera (Dec. III, lib. IV, cap. XVIII, p. 141.) A similar duality was found among the Itzaes inhabiting Lake Peten, when they were conquered by Urua, in 1698. “Canek” and “Quincanek” were the titles of the two chiefs. They called each other cousins. (“Historia de la conquista de la provincia de el Itza, reduccion y progressos de la de el Lacandon, etc., etc.,” by Juan de Villagutierrez Sotomayor, Madrid, 1701.)

¹²² The term “Quachiatli” is from Torquemada (Lib. XIV, cap. V, p. 543). Molina has no mention of this word. Clavigero describes it, without giving a name, as “a very subtle piece of featherwork, hanging down the entire back” (Lib. VII, cap. XXII). See, also, Tezozomoc (Cap. LXXVI, p. 129).

¹²³ Clavigero (Lib. III, cap. XVIII). Tezozomoc (Cap. LXXVI, p. 129). Mendieta (Lib. II, cap. XXVI, p. 130). Durán (Cap. XXXV) p. 277: “y yendo el rey Axayacatl vitorioso tocando un tambor de oro que à las espaldas llevaba, lo qual se usaba quando iba en alcence.” (Idem, Cap. XLVI, p. 372) “y à las espaldas un atambor de oro, con que los reyes hazian señal al arremeter y en el retirar, de suerte que los reyes servian de atambor, ò sus generales, los quales tocauan al arma y à recoger de los exercitos.”

¹²⁴ Especially the left hand figure of the so-called “altar-piece.” The right hand figure may be a priest, but we would suggest that both figures are those of *chiefs*, one representing the equivalent to the “Tlaca-tecuhtli,” and the other,—the right hand figure,—the equivalent to the “Cihuacohuatl.” (See: “Travels in Central America,” Yucatan, and Chlapas,” by J. Stephens; also, the plates from Dupaix, in Lord Kingsborough.) Count Minutoli (“Beschreibung einer alten Stadt in Guatemala,” Berlin, 1832) has: Tab. I, a fair representation of the “tablet of the cross,” also. The left hand figure is evidently a chieftain of the highest grade, as the “Quachiatli” of Torquemada,

Both the "chief of men," and his "*coadjutor*," the "*Cihuacohuatl*," while exercising, under certain extraordinary circumstances, discretionary powers in military matters, were still subject to a *higher* authority. This was the *council of chiefs*¹²⁵ ("tlatoacan"), of which they were, *ex-officio*, members, with the additional title of "speakers" ("tlatoani"), and occupying, therefore, the "speaker's-seat" ("tlatoca-ycpalli").¹²⁶ In this council the *ultimate power of government* was vested, its functions were equally *legislative* and *judiciary*; the execution of its decrees belonged to the war-chiefs. *Peace and war* lay in its hands, the war-chiefs alone could not decide upon either.¹²⁷ The existence of this council as

is plainly recognizable. In all those figures of Central American reliefs we discern the characteristic parts of the Mexican costume: the breech-cloth ("maxtlatl") and the head-dress. Several of them have the jacket, "hnepill," and the chiefs have, as ornaments, the "cozcatl," the "matzopetztl," and especially, the ear-rings and the towering plumage. Lip-pendants and nose-rings are very prominent on the statues of Copan. An illustration of the costume of the two chiefs, both being dressed exactly alike, is given by Durán on plate 8 (to chapter 23 of the first part of his work). Axayaca is also represented in full armour on plates 10 and 11.

¹²⁵ The word is from Molina (Vocab. II, p. 141,—"tlatoacan,"—"corte ó palacio de "grandes señores." Id. I, p. 30, "consejo real," "tlatocanecentaliliztli"). It derives from "ni-tlaton," to speak. A very good illustration of this council is found in the "Popol-Vuh" (Part II, cap. VIII), notwithstanding the diffuse language, we can easily discern how the council of chiefs was constituted at "Xibalba," "Hunahpu," and "Xbalanqué," upon their arrival at the council-hall, found there twelve chiefs, the names of which are all given (p. 147). After Montezuma was captured and brought to Spanish quarters "there were always in his company twenty great lords and companions and councillors" (Bernal-Díez, Cap. XCV, p. 95, vol. II, Vedia). These were probably the members of the supreme council.

¹²⁶ "Tlatoani,"—"hablador, ó gran señor" (Molina, II, p. 141). Bernal-Díez says (Cap. XXXVIII, p. 32, Vedia. II) that when they arrived at San Juan de Ulloa: "vinieron dos canoas muy grandes, . . . y en ellas vinieron muchos Indios Mejicanos, y como vieron los estandartes y navío grande, conocieron que allí habían de ir á hablar al capitán, y fuéronse derechos al navío, y entran dentro y preguntan quien era el Tlatoani, que en su lengua dicen el señor." Señor Icazbalceta, in his note No. 36 (p. 13 of Vol. II of "Colección de Documentos") defines "Tlatoani" as follows: ". . . era la denominación que se daba á los superiores y gobernantes, equivalente á "la antigua nuestra señor, y con la cual llamaban á los españoles." ("Real Ejecutoria de S. M. sobre Tierras y Reservas de Pechos y Paga, perteneciente á los caciques de Axapueco, de la Jurisdicción de Otumba.") "Tlatoca-ycpalli," from "tlatoca," and "icpalli," stool.

¹²⁷ The fact of the supremacy of the council in all matters is amply proven (Durán, Cap. XIV, p. 117; cap. XVI, p. 133). Acosta (Lib. VI, cap. XXV, p. 441): "All these four titularies were of the supreme council, without whose advice the king neither made, nor could make, anything of importance." But especially the remarkable paragraph from Torquemada (Lib. XI, cap. XXV, p. 352), speaking of the "Cihuacohuatl": "Este Juez parece tener veces, y autoridad de Virrei, á los quales comunica el Rei autoridad absoluta, para gobernar, y despachar negocios, cometidos á su sola, y absoluta determinación, . . . pues en cosas de su Gobierno, conoce la audiencia, que toda junta se hace persona de Rei, y con su autoridad le pueden reprimir, y reprimen." It is unfortunate that we have not any definite and detailed knowledge of the composition of this council. All we can say positively is, that it existed, and was supreme.

a *supreme* authority, proves the Mexicans to have been, not *subject* to the despotic rule of a monarch, but *organized* after the principles of a *military democracy*. They were a barbarous but *free* and *warlike* community.

Legitimate causes for war were frequently furnished to the Mexicans. Their traders, or those of allied or subjected tribes, were often exposed to outrage and ill-treatment on the part of and among foreign "pueblos." Such acts were always regarded as justifying open warfare, and the opportunity was speedily improved. But *pretexts*¹²⁸ were eagerly sought for also, and the Mexicans therefore never at a loss to find *some* ground for pouncing upon any tribe which excited their cupidity. We have already stated that war was carried on by them for subsistence. It was further required for the purpose of obtaining human victims, their religion demanding human sacrifices at least eighteen times every year.¹²⁹ Every important event, like an improvement of the "teo-calli,"¹³⁰ and especially the installation of a new war-chief of the highest degree ("Tlaca-tecuhtli"), had to be celebrated by a special butchery of men,—and these victims had to be obtained through *war*.¹³¹ Therefore the well-known custom of the Mexicans, on the battlefield, to look more to the *capture* than to the *slaying* of their foes.¹³²

¹²⁸ The war which resulted in the conquest of Chalco, the foray against Ahuilizapan (Orizava) and Cempoal, were all brought about by the most wanton provocations on the part of the Mexicans (Tezozomoc, Cap. XIX, p. 30; cap. XXI, p. 33; cap. XXXI, p. 48). (Torquemada, Lib. II, cap. XL, p. 139.) (Clavigero, Lib. IV, cap. XIII.) Durán positively denies it, saying that the Mexicans never made war unless provoked, but this is too manifestly untrue (Gomara, p. 442).

¹²⁹ These were the regular monthly festivals only.

¹³⁰ Durán (Cap. XXXVII, p. 287), when the war against Mechoacan was determined upon: "and that the main reason why he wished to measure himself with their strength was to try to celebrate with them (by the means of prisoners taken from them) the inauguration of the stone, that was similar to the sun, and to tinge his temple with the blood of these nations." Gomara ("De las guerras," p. 442, Vedia, I, "y para, como ellos dicen, haber esclavos que sacrificar à los dioses y cebar à los soldados").

¹³¹ It was obligatory upon the chieftain to inaugurate his administration with a military exploit, and great importance was placed upon that the head-chief should make prisoners on that occasion with his own hands. Acosta (Lib. VI, cap. XXIV, p. 431). Tezozomoc (Cap. LVII, p. 93; cap. LXI, p. 101; cap. LXXXIV, p. 147). These three passages relate to Tizoczin, to Ahuitzotl, and to the last Montezuma, respectively.) Mendieta (Lib. II, cap. XXVII, pp. 131, 132, and 133). Torquemada (Lib. II, cap. LV, p. 172, and cap. LXIX, p. 196).

¹³² This was a very fatal custom, as against the Spaniards. Had the Mexicans been intent upon *killing* instead of overpowering their white enemies alive, their resistance would have been more formidable. Thus, for the sake of capturing a single horseman, they recklessly sacrificed numbers of their own, when they thought to be able to surround him, and cut him off from his corps or detachment. The custom was, however, general among the Nahuatlac tribes.

The question of peace or war could only be decided by the supreme council of chiefs.¹³³ If war was to take place it was *sometimes*, but *not always*, resolved to send delegates to the tribe concerned, challenging it to fight or to submit and to become tributary to the Mexicans.¹³⁴ These delegates carried particular distinctive tokens;¹³⁵ they proceeded unmolested to the pueblo which they were to notify, and, entering the council-house, briefly exposed the object of their coming to the chiefs there gathered. If, after deliberation, the tribe thus threatened agreed to submit and to give tribute, then all was well, and the delegates departed again, loaded with presents. But if any reparation or proposal for accommodation other than *actual submission* was proffered, or if the reply was even defiant, the Mexican delegates at once stepped up to the head war-chief of the enemy, and with white paint (which they carried in their casket of supplies) anointed his arms. Further, they placed feathers on his head and gave to him a shield and sword. This was the declaration of war.¹³⁶ Thereupon they withdrew, but if a custom prevailing among all the tribes then inhabiting the

¹³³ We have, on this point, the positive declaration of the last Montezuma himself. When the tribe of Huexotzinco sent delegates to Mexico, proposing an alliance against Tlaxcallan, Montezuma replied to them: "Brothers and sons, you are welcome, rest yourselves a while, for although I am king indeed, I alone cannot satisfy you, but only together with all the chiefs of the sacred Mexican senate" ("Yo solo no puede valeros, sino con todos los principales del sacro senado Mexicano." Tezozomoc, Cap. XCVII). Also, Gomara ("De las guerras," p. 442, Vedia, I).

¹³⁴ Mendieta (Lib. II, cap. XXVI, p. 129): "This was the common way, although sometimes they took them by surprise."

¹³⁵ Torquemada (Lib. XIV, cap. I, p. 534): "In the right carried an arrow, holding it by its head, the feathered end upwards, and in the left hand a small shield."

¹³⁶ Ixtlilxochitl ("Histoire des Chichimèques ou des Anciens rois de Tezcuco," Cap. XXXVIII, pp. 269, 270, 271, and 272) claims that they sent three different summons, one by the Mexicans, one by the Tezcucans, and another by the Tlaxcopans. But this is not otherwise confirmed. The answer, unless time was positively requested, and the Mexicans deemed it politic to delay, decided the very first time.

Mendieta (Lib. II, cap. XXVI, p. 129): "Determined and resolved that there should be war, they sent certain shields and robes to those whom they intended to assail (as it was their custom to never send a message without a present)." Torquemada (Lib. XIV, cap. II, p. 537, almost a literal copy from Mendieta). Tezozomoc (Cap. VIII, p. 15; cap. XXVII, p. 40, etc., etc.). Ixtlilxochitl ("Hist. des Chichim.", Cap. XXXVIII). Durán (Cap. IX, p. 74; cap. LVII, p. 450. Montezuma being challenged by the Huexotzinca, and Cap. LIX, p. 464, by the Cholulteca). The white paint, "tlaztl" (Molina, II, p. 113, "cierto barniz, o tierra blanca." See, also, Tezozomoc, Cap. VIII), was an emblem of death, the shield, "for to defend himself therewith," and the sword, "for to offend if he was able." The latter is analogous to the red tomahawk sent in token of war by northern savages (Looskiel: "Geschichte der Mission der evangelischen Brüder unter den Indianern in Nord-Amerika." Barby, 1789, Part I, cap. XI, p. 187. Also, Adair: "History of the American Indians").

country, had permitted their *coming* unmolested,¹³⁷ their *return*, once outside of the council-house, was not placed under any similar safe-guard. Oftentimes that return to Mexico was attended with the most imminent personal danger to the delegates.¹³⁸

The cases, if any, are certainly few in number, where a tribe thus provoked or defied, *voluntarily* submitted to tribute. The Mexicans could be *sure*, almost, of war, *whenever their supreme council had agreed upon it*. Therefore, as soon as the meeting at the official house had concluded, war was proclaimed in the four quarters of the pueblo, and in case of great urgency, a monstrous drum, with a specially dismal sound, called the whole tribe to arms from the top of the chief temple.¹³⁹

Owing to the peculiar organization just discussed, a rapid mobilization of the forces of the whole tribe was very feasible. The minor subdivisions gathered under their "captains," and all together proceeded almost simultaneously to the store-houses of the four great quarters of the tribe, where the stewards dealt out the

¹³⁷ Torquemada (Lib. XIV, cap. I, p. 535): "que aunque estas Gentes eran de su natural condition mas vengativas, que todas las del Mundo, respetaban a' los Embaxadores de sus mortales enemigos, como a' Dioses, teniendo por mejor violar qualquier rito de su Religion, que pecar contra la Fé dada á los Embaxadores."

¹³⁸ For comparison with Loskiel on the northern Indians (Cap. XI, p. 187) see Tezozomoc (Cap. VIII, p. 15). When the "Atempanecatli Tlacaeleltzin" returned for the second time to Azcaputzalco, this time to challenge the Tecpanecas and defy them to open war, and after he had properly decorated their war-chief Tezozomoc, the latter gave to him a sword, a shield, and a helmet, saying: "Take here, also, something to protect your body, and this shield and sword, "maccuahuitl," and see if you may return home safely." Atempanecatli was attacked by Tecpanecan scouts, pursued as far as upon Mexican soil, and escaped only through his swiftness and personal bravery. This episode is confirmed by Durán (Cap. IX, p. 74), and by Acosta (Lib. VII, cap. XII, pp. 482 and 483), although they both say that the Mexican delegate escaped by avoiding the warriors of the Tecpanecas by circuitous paths. Still, it shows that his return was attended with great personal danger. Clavigero (Lib. III, cap. XVII) attributes this action to the first Montezuma. ("Huehue-Montezuma," or "Montezuma Ylhuicamina.")

¹³⁹ Bernal-Diez (Cap. XCII, Veda, II, pp. 90 and 91). On the top of the great temple: "y alli tenían un tambor muy grande endemasia, que cuando le tenían el sonido del era tan triste y de tal manera, como dicen instrumento de los infernos, y mas de dos leguas de alli se oía; y decían que los cueros de aquel tambor eran de sierpes muy grandes." Besides this drum they used conch-shells in great numbers, thus creating a horrid noise. The Spaniards grew intimately acquainted with these awful signals on the night of the 1st of July, 1520, when the various instruments called out the Mexican warriors to that pursuit which caused the slaughter on the dyke leading to Tlacopan. Every one reading the splendid descriptions of Mr. Prescott, of this bloody retreat ("History of the Conq. of Mexico," Book V, chap. III), will remember: "the huge drum in the desolate temple of the war-god sent forth those solemn tones which, heard only in seasons of calamity, vibrated through every corner of the capital" (p. 363, of Vol. II).

armament.¹⁴⁰ Thus the largest bodies were assembled, furnished with weapons, and organized under their respective leaders of all grades on very short notice, awaiting the signal from the chief commander to sally forth, either by canoes across the lake,¹⁴¹ or along the causeways, to the mainland. Each warrior carried mostly his own frugal provisions¹⁴² which the women of each household had prepared; "corn-bread, meal-cakes, ground beans, "corn-meal seasoned with pepper;"¹⁴³ but special carriers also accompanied the force, loaded with a surplus of food, with robes for tents, reeds for huts and bowers, and with cooking utensils like kettles, pans, baskets; also with mats.¹⁴⁴ Sometimes these

¹⁴⁰ It also happened that an interval of twenty days (a Mexican month) elapsed between the proclamation of war and the final departure. At least, in most cases, a few days were spent in preparations, since the Mexicans had to give time to their outside allies or subjects to prepare, also. Tezozomoc (Cap. XXXVI): "The Mexicans in the interval prepared the arms in all the quarters,—shields, swords, and made and finished many rods ('tlatzontectli'), also slings, and pebbles to be thrown with cords." (Id., Cap. LVII) "Within twenty days they prepared and fitted out all kinds of arms, first in the five quarters of Mexico-Tenuchtitlan: Moyotlan, Teopan, Ytza-cualco, Cuicapan, and Tlatilulco, now called Santiago." In many cases, however, an instantaneous mobilization of the whole force became necessary. Mexico, in times of peace, had to be always ready for war. See, also, Tezozomoc (Cap. XXXII, pp. 49 and 50).

¹⁴¹ Canoes, "acalli" (water-houses, from "atl," water, and "calli," house), were used for the traffic with the main land, but also largely for the carrying of warriors. It is well known what important part they played against the Spaniards during the siege. For the movements of the Mexicans against a hostile tribe, both on land and water, see Durán (Cap. XIV, p. 131), wherein he describes the attack upon Cutlahuac, both by canoes and on dry land.

¹⁴² Durán (Cap. XLVI, p. 369): "porque demas de lo que los reyes proueyan de sus grandes trojos y graneros, cada soldado llevaua á questas su particular comida, todo lo que podia llevar, atada á la carga el espada y la rodela, etc., etc."

¹⁴³ The women prepared the food, but it also occurred that the *stewards dispensed it*. Tezozomoc (Cap. XXXII, p. 49): "With this the stewards and calpiqueques of the tribes gave to their quarters maize for to make biscuit, tlacactutopochtli, pinole, ground pepper, chian, beans, and all what pertained to it, providing themselves with every thing necessary for certain day stated." The "tlaxcaltotopochtli" (from "tlaxcalli," corn-bread, and "totopochtli," burnt-bread) would be biscuit of maize-meal, and it is therefore called "vizcocho." The pinolli, or pinole, corn-meal mixed with pepper, was an important victual. The food of the Mexicans, in general, outside of the meats (exclusively fowl and some game) and aquatic animals, consisted of maize in various forms, and of pepper, "chilli," as seasoning. Cacao furnished their main beverage, and stores of it were taken along. See, also, Durán (Cap. XLVI, p. 369: "maiz tostado y otro molido y hecho harina, frijol molido, pan biscochado, tamales mohosos y curados al sol, grandes fardos de chile, cacao molido hecho en pellas"). They also used maize to compose a beverage called "yolatl," which possessed particularly vivifying qualities (See note of Sr. Ramirez to p. 290 of Durán), and which they dispensed even on the battlefield (Durán, Cap. XXXVII; Tezozomoc, Cap. LII).

¹⁴⁴ These carriers are called "tamemes," and are generally regarded as having been slaves. But they probably were outcasts from the bond of kinship, or the men of newly conquered tribes (like Tlatilulco for a time after its capture), upon whom this degrading work (because woman-like!!) was imposed as a penalty. Slaves were not nu-

carriers were burthened with a surplus of arms, and even with ornaments, designed to reward deeds of high valor on the battlefield itself. This "train" (if we may use the expression) was under the command of stewards, who accompanied the force for that purpose.¹⁴⁵ The Mexicans having no domestic animals besides small dogs and fowls, it necessarily followed that their supplies and stores taken along by carriers were limited, and that consequently their expeditions could never be of long duration, partaking more of the character of forays or "raids" than of regular campaigns. As long as they moved among friendly tribes they expected these to furnish victuals; further on they relied upon what the enemy's country might possibly afford.

But the Mexicans, since their position in the middle of the lagoon had been secured, and after they had once gained a foothold on its shores by overpowering successively some of the tribes scattered along the mainland, not any longer ventured out alone on their marauding expeditions. They required of those whom they conquered to join them in arms at their bidding.¹⁴⁶ What the exact relations were, which existed between the Mexicans and the other tribes of the valley, especially those of Tezcuco and Tlaco-

merous among the Mexicans, if there were any at all beyond the prisoners of war. The latter they could not use for such a purpose. Some of the young people often accompanied the warriors, carrying their weapons and supplies, that they might see and learn (Tezozomoc, Cap. LXXI, p. 121). But the numbers of these carriers (100,000) are greatly exaggerated. Among the various objects mentioned by Tezozomoc as carried along by the Mexicans in their campaigns, there are "tents, low huts, reeds for the xacales." "Tent," in Mexican, signifies "Quachcalli," from "Quachtli," mantle, and "calli," house. Huts, "xacalli," of straw, or bowers, they certainly used, and the step is not very great, from the hut to the tent covered with what we call among northern Indians a "blanket." Durán mentions both tents and huts, "tiendas y xacales," frequently (Cap. XXI, pp. 183 and 186; cap. XXII, p. 190, etc.). The cooking utensils, like pans and kettles, had to go along, of course. Mats, "petlatl," for couches, and probably, also, for the covering of huts, were equally requisite and even indispensable. Lastly, mantles of "nequen" (Sisal hemp, "Jennequin"). This was the most ordinary material composing the dress of Mexicans. The "huepili" of the ordinary Mexican was made out of "nequen." These mantles were used for protection against the sun; they were light and therefore convenient to wear and to have carried (See Tezozomoc, Cap. XXXII, pp. 49 and 50).

¹⁴⁵ Tezozomoc (Cap. XXXII, p. 50): "Y los mayordomos personalmente fueron a esta jornada" (against Orizava).

¹⁴⁶ Those tribes which had been made subjects to Mexico were compelled, whenever called upon, to join the armed forces of the Mexicans. Tezozomoc seldom speaks of any foray without mentioning that the subjected tribes took part in it, on the summons of the Mexicans to that effect. See Herrera (Dec. III, lib. IV, cap. XV, p. 183); Tezozomoc (Cap. XXXI, p. 49; cap. XLVII, p. 77; cap. LI, p. 83). There is hardly any direct testimony, but the fact is abundantly proven that the Mexicans could call out, and did call out, to their assistance, any tribe which they had previously conquered. See Durán (Cap. XI, p. 818); and Zurita "Rapport, etc." p. 11.

pan, we shall not attempt to discuss here, reserving it for a future opportunity;¹⁴⁷ it is sufficient to establish that all those tribes, whether regarded by history, as it now appears, as confederated or allied to the Mexicans, or as their subjects, *were at any rate under the military supremacy of Mexico*.¹⁴⁸ Whenever, therefore, from any cause whatever, the Mexican chief-council agreed upon war, delegates were sent to all tribes connected with Mexico,¹⁴⁹ calling upon them to send their forces, with supplies and ammunition, to a certain place where the Mexicans would meet them, and whence all together would proceed, under Mexican command, on the foray determined upon by the tribe of the lake-centre.¹⁵⁰

Such notifications were never disregarded by the valley-pueblos,¹⁵¹ still less by those of different stock-languages outside of the valley, and held by the Mexicans as tributary subjects.¹⁵² The force,

¹⁴⁷ It is not to our purpose to determine here whether a league or confederacy existed between Mexico, Tezcuco, and Tlacopan, or whether the latter two tribes were subjects of the former. There is a great deal of contradiction among the authors on the subject, and we intend, if possible, to make it the subject of a future discussion.

¹⁴⁸ Herrera (Dec. III, lib. IV, cap. XV, p. 133): "Con Mexico estaban confederados los Señores de Tezcuco, i Tlacopan, que hora llaman Tacuba, i partian lo que ganaban, i obedecian al Señor de Mexico, en lo tocante a la guerra." This is also confirmed by the fact that, when Cortés moved towards Mexico from the coast, he was everywhere told of the great power of the *Mexicans only*, without any reference to the others. On a joint expedition or foray, the Mexican chief commanded the others, even if he was inferior in rank to the "Tlacatecutli." (Zurita, p. 11).

¹⁴⁹ This fact is so numerously mentioned by Tezozomoc, that we forbear encumbering with detailed quotations. Almost every other chapter of the *Cronica Mexicana*, after the 20th about, has a reference to it. Also Durán.

¹⁵⁰ When the Mexicans sallied forth on their unlucky expedition against Mechoacan, in 1479, all the tribes were directed to meet at "Matlatzinc-Toluca" (Tezozomoc, cap. LI, p. 83). Durán (Cap. XXXVII, p. 288). Axayacatl: "mandó partiense el exercito de la ciudad y que en sus capitánias fuesen a los términos de los Matlatzincas, y que allí se hiciese junta de la gente entre estos terminos de Matlatzinc y Tlaximaloyan." On the foray against "Xiquipico y Xilotepec,"—Chilocan was appointed meeting-place,—"commenced to move the Mexicans, all the others having set out already two or three days before, for the same place of Chilocan" (Tezozomoc, cap. LXI, p. 102). Durán, speaking of the foray against Mexititlan (Cap. XL, p. 312): "El rey, que mientras le tu-raua la uncion y estar velando salvo sus insinias y en ayuno y penitencia, que toda la gente que estuviese aperceuida y aparejada se recogiesse en Atotonilco, y que allí aguardasen todos al demas exercito y en Itzmiquilpan."

¹⁵¹ There is not a single instance on record that, up to the time the Spaniards arrived, any pueblo had ever ventured to refuse such assistance to the Mexicans. Only when Cortés moved upon Mexico for the second time, did such acts of open rebellion occur.

¹⁵² Some difference existed between the relations of the Mexicans with *kindred* tribes speaking the same ("Nahuatl") language, and with those of other stock. Thus, the "Totonaca" of the coast were held in great subjection, while the Chalca of the valley were treated almost like allies. It is not impossible that the so-called empire of Mexico (or of Anahuac, as it is very erroneously called) may yet prove to have been but a confederacy of the Nahuatlac-tribes of the valley, with the Mexicans as military leaders.

therefore, that sallied out of Mexico was sure to find at the meeting-place appointed, numerous reinforcements from various tribes, fully armed and equipped, with an organization similar to their own,¹⁵³ ready for the onward march, at the end of which, if successful, a certain share of human victims and of plunder would reward their efforts.¹⁵⁴

As soon as the entire force was duly collected at the appointed meeting-place, it began to move forward speedily and swiftly, and in a straight line, if possible, towards the enemy's country. The various tribes, as well as their respective subdivisions, kept distinct from each other, led by their own native chiefs. The Mexicans were mostly in the rear. The approach of this body of warriors was not always pleasant to tributary or friendly settlements situated along the marchroute. These were expected to come out with reinforcements, with food and presents, and if any one of them failed or neglected to comply with these requisitions, it became exposed to the most barbarous violence. Such pueblos were sacked, plundered, the people ill-treated. In their fury the Mexicans sometimes went so far as to empty and destroy the stores of maize, and to kill wantonly the few domestic animals (dogs and fowls) of the unfortunate inhabitants.¹⁵⁵

The tribute which the valley pueblos paid to Mexico may yet, perhaps, prove to have been more a religious offering than anything else. They were certainly more on terms of equality, whereas the foreign tribes were held in subjection proper. The word "popoloca," stammerers, applied by the Mexicans to those of the coast, and which has induced Clavigero to adopt the erroneous idea of a "Popoloca" language, shows the disdain and hatred nourished by tribes of different stock towards each other.

¹⁵³ Each tribe had to prepare its own arms and supplies, it remained under its own chiefs and captains. Tezozomoc and Durán both agree on this point. Their organization was essentially the same as that of the Mexicans. Everywhere in the valley, and even in Matlaltzinco, we find the characteristic division of the Mexicans,—the two head-war-chiefs, the four quarters, and the minor captains and braves.

¹⁵⁴ Ixtlixochitl ("Histoire des Chichimeques," Cap. XXXVIII, p. 273) says that Mexico and Tezcuco had each two-fifths, Tlacopan one-fifth, of the spoils. Tezozomoc claims three-fourths for Mexico alone. The point is yet in doubt. (Zurita, "Rapport, etc.," p. 12.)

¹⁵⁵ Tezozomoc (Cap. XXXII, p. 50): "The Mexicans never lacked food nor supplies," when on the march, since they "were so much feared by all the tribes, that as soon as they arrived they were well received and treated. When their forces were on the war-path neither man nor woman remained outside of their dwellings, out of fear of the warriors, and if these perchance met any one, any laborer or trader, they robbed him even up to his very clothes. Such tribes as did not go out to meet them they plundered and robbed of everything, emptying their stores of maize, killing their fowls and even their dogs." (Id. Cap. LXXXIV, p. 147.) Durán (Cap. XXI, p. 183): "porque para el camino los pueblos y ciudades proveían de todo lo necesario, como tengo dicho, so pena de ser destruidos." It thus appears that for the march the Mexicans did not have to provide any food, since the settlements along the route had to maintain

The objective point of this march was, as we have already stated, the enemy's territory. There was no strict boundary-line dividing the tribes of Mexico from each other; a belt of uninhabited or deserted land merely surrounded and thus isolated every tribe.¹⁵⁶ This neutral strip was the ground on which the enemy expected the Mexicans (provided they knew of their coming, and felt strong enough to meet them in the open field).¹⁵⁷ It was, therefore, commonly called "ground of war or battle" ("Yao-tlalli"),¹⁵⁸ and as soon as the Mexican force approached this region, its movements grew less swift and proportionately more cautious. At dusk they halted on this dangerous area, selecting for their encampment, if possible, an elevated, open position, unfavorable for surprise. The huts (and perhaps tents) and bowers, for which some materials had been taken along, were hurriedly

them, Duran positively saying, on the same page, after a lengthy enumeration of the supplies and provisions prepared for the journey: "lo qual, luego fué en seguimiento de la gente; lo qual no se prouea sino para el lugar donde se avia de asentar el real, porque para el camino los pueblos y ciudades prouean de todo lo necesario, etc., etc., etc." The same author continues (p. 184): "Hacianse servir como dioses, y en todos los caminos no parecia gente por donde iban los soldados y la gente de guerra, todos se encerraban que no osauan andar por los caminos, porque los soldados les quitaban quanto llevaban en sus cargas, y si acaso le queria defender, los apaleauan y herian, y algunos mataban y iban robando las sementeras y matando quantas gallinas y perillos topaban; iban haciendo quanto mal podian, como lo hacen agora nuestros españoles, si no los van a' la mano, . . . y asi en sabiendo que aua guerra, todos los vecinos de los pueblos, por donde auian de pasar los del exercito, se escondian y escondian el maiz, el chile, las gallinas y los perros, finalmente escondian quanto tenian." This shows a very simple mode of subsistence.—they lived upon the country through which they passed. But it also shows the barbarous condition of the Nahuatl tribes. Even on their march through a friendly country from whose annual tribute they partly subsisted, they behaved little better than a large horde of savages, or at least of cut-throats and highway robbers. The "civilized" troops of Europe were little better at that time, and even up to the close of the 17th century.

¹⁵⁶ Gomara ("De las guerras," Vedia, I, p. 442): "They call quiahtlali the space and area which they left depopulated between the boundaries of each province for to fight there, and it is like unto sacred." See Tezozomoc (Cap. LXVIII, p. 113; cap. LXXXVI, p. 151; cap. XCV, p. 167, etc., etc.). The delegates sent by Tlaxcallan, Huexotzinco, and Cholula, to assist at the festivals in Mexico, were always met "half way in the woods" ("la mitad del monte") separating the tribes. Ixtlilxochitl ("Histoire des Chichimèques," Cap. XXXIII, p. 125) mentions a boundary line between the territories of Mexico and Tezcuco, but the description of it is such that the statement remains more than doubtful.

¹⁵⁷ Torquemada (Lib. XIV, cap. III, p. 538: "Quando se admitia la Batalla, y venian los unos, contra los otros, salian los de la Provincia, o Pueblo a' un lugar particular, que tenian entre sus terminos los quales llamaban Yauhtlalli, que quiere decir; Termino o Lugar de la Guerra. Aqui salian los Proprietarios de la Tierra a' recibir a los contrarios." Also, Gomara (Vedia, I, p. 442).

¹⁵⁸ From "yaotli," enemy, or "yaoyotli," battle or war, and "tlalli," ground or soil.

erected, each tribe camping distinct from the other, the Mexicans occupying the centre of the entire camp.¹⁵⁹

It was customary with the Mexicans to send out spies who, under different disguises, penetrated the hostile country ere the force had reached its neighborhood.¹⁶⁰ Besides, as soon as the latter halted on the "war-ground," numerous braves ventured out in advance, as scouts, stealthily creeping through the woods, as near the enemy as possible, to ascertain its position and numbers, as well as armament. The information gathered from these sources was reported during the night to the Mexican chieftain in command, who sat in council of war with the other principal leaders. This meeting, guided partly by the information thus obtained, devised the plan of attack for the coming day. The tactics of the Mexicans were extremely simple: a decoy, in the shape of a precipitate retreat, and an ambush at the termination of it, seem to have been their highest conception. Therefore, during the night, they often dug pits far in advance of the encampment, wherein, at the close of the council, the most daring braves (and even the Mexican commander himself, occasionally) concealed themselves, their bodies covered with straw, branches, or foliage.¹⁶¹ Meanwhile the warriors were overhauling their arms, painting them-

¹⁵⁹ Duran (Cap. XIX, p. 168): "Así se partió el exercito de Tulancingo y caminó 'hasta llegar a vista de los enemigos, donde empezaron a' hacer tiendas y xacales, 'cada provincia y nacion para sí.' (Idem, Cap. XXI, pp. 183 and 184; cap. XXII, p. 180; cap. XXXVII, p. 288: "donde a' tercer día se juntaron todos los soldados y gente de 'guerra con toda la priessa posible y mandaron asentar el real, el qual asentaron con 'muchas tiendas y casas de esteras, aquellos usaban en sus guerras y oy en día las usan 'en los mercados, que son unos tendejones de juncos que echan las espadañas.") Tezozomoc (Cap. LI, p. 83; cap. LXXXVIII, p. 135). This author contains so many details on this subject that we forbear quoting him further with reference to chapter and page. He distinctly says that each tribe camped by itself, the Mexicans in the middle.

¹⁶⁰ Mendieta (Lib. II, cap. XXVI, p. 130): "enviaban delante sus espías muy disimuladas y pláticas en las lenguas de la provincia a' do iban a' dar guerra." Torquemada (Lib. XIV, cap. II, p. 538) copies almost textually.

¹⁶¹ Tezozomoc mentions this very frequently. (Cap. XLVIII, he relates how the chief Axayaca hid himself in such a pit, in the foray against the Matlatzincas. This is confirmed by Durán, Cap. XXXV, p. 277: "Y quedándose en celada el rey, metidos entre las ramas y otros debaxo de la tierra escondidos todos los soldados viejos y principales valerosos.") He also mentions (Cap. XIX, pp. 169 and 170) a very extensive ambush of that kind against the Huastecas. Mendieta says (Lib. II, cap. XXVI, p. 131): "They used ambushes, and often very artificial ones, since they laid down on the 'ground, covering themselves with straw or herbs, etc., etc." Torquemada (Lib. XIV, cap. III, p. 539) agrees almost literally with the above. Also Clavigero (Lib. VII, cap. XXV): "They used ambushes frequently, and concealed themselves in bushy places, 'or even in pits made for that purpose, as the Spaniards often experienced it. Frequently they took to flight in order to draw the enemy into dangerous positions, or to 'assail his rear with fresh troops." We shall revert to this point hereafter.

selves afresh, and the captains attended to their respective detachments, exhorting the men to courage and endurance. Each tribe agreed upon its particular war-cry, to be used in action only. Finally, the whole encampment sometimes joined in an awful yell: the defiant war-whoop of thousands of Indians, and intended to mark, not their presence (which they supposed to be known), but their numbers and ferocity. This shout not unfrequently called forth a response from the enemy lurking in front of them.¹⁶³ Then the stillness of the night, of the gloomy and treacherous night preceding an Indian engagement, settled at last upon the "land of war."

This quietness did not last very long. Even if neither of the opposing parties attempted to surprise the other under cover of darkness, both were certainly alert before daybreak.¹⁶³ The Mexican force, preceded by a cloud of scattered braves as skirmishers or scouts, advanced cautiously, not in one solid body, but by tribes and subdivisions of tribes, as upon the march. Very soon their extreme outposts encountered those of the enemy, the war-whoop was raised on both sides, and a series of personal combats engaged along the whole line. Pebbles, carried along for that purpose, were hurled by means of the sling; stones picked up from the field were thrown at each other, accompanied by hideous yells and defiant epithets. Then followed darts and arrows, both parties dancing about to avoid the missiles. Meanwhile accessions from the main bodies moved up, the fight came to closer quarters, the sword and club being resorted to. If the enemy was sufficiently strong so as not to give way at once, the Mexicans feigned to retreat, rushing back towards the place where an ambush had been prepared. The pursuing foe, once caught in the trap, was roughly handled, their adversaries pressing upon them from all sides, and his efforts to disentangle himself were always accompanied with the heaviest loss, either in prisoners or in killed. At other points of the line similar snares were extended to the Mexicans by their opponents. Thus the fight progressed like an extensive skirmish, each party bent upon weakening the other by partial losses through rude stratagems, until the enemy, reduced in numbers and dis-

¹⁶³ The war-whoop ("alarido," or "la grita," as the Spanish authors call it) is distinct from the war-cry, the latter serving to identify the warriors of the same tribe or "quarter." The former is "tatzilzilzil," the latter, "yaotzatzilzilzil."

¹⁶⁴ The usual time for such attacks was daybreak or dawn (Texozomoc, Caps. LXXXIV, p. 148, and LXXXVIII, p. 185: "al amanecer del alva").

heartened by the death or capture of many principal warriors, gave way in an unmistakable manner.¹⁶⁴ Then a precipitate

¹⁶⁴Besides Tezozomoc, who is so full of details on these fights that it is wasting space to quote him extensively, we find the most concise and reliable statements in Mendieta's "*Historia Ecclesiastica Indiana*." The descriptions of Mendieta agree perfectly with those of Tezozomoc (less with those of Duran), while the two authors had nothing in common, besides, Mendieta, the revered Franciscan father, terminating his work about 1598, and Tezozomoc, the simple Indian, his MSS. in 1598. Neither of these works were printed previous to this century. Mendieta says (Lib. II, cap. XXVI): "At the outset they sped stones by slings, and rods like darts. . . . They also threw stones by hand. Thereafter they resorted to sword and shield, and the archers went in at the same time well protected thereby, and thus they spent their ammunition. The archers from Tehuacan sometimes were so dexterous that they sped two or three arrows at once with the same precision as one bowman would shoot one alone. After the vanguard had spent a good deal of their munition they charged with sword and dart, the sword being of wood, long, and lined with cutting pieces of flint. It was tied to the wrist, in order that dropping it they might seize an enemy (as their main object was to capture men alive) without losing the weapon. They had no style of fencing, neither did they charge directly, but skirmished and rushed back and forth. At first one party would turn to flee, as it seemed, the others pursuing, killing and wounding and capturing all those lagging in the rear. Then the party fleeing would suddenly turn back upon the pursuers, which fled in turn. Thus they proceeded as in a tournament ('juego de cañas'), until they were tired, when fresh bodies moved up to take up the fight. They had well disposed and agile people to care for the wounded, bringing them to the rear where their surgeons were with the medicines, healing and nursing them." See also, Clavigero (Lib. VII, cap. XXV), and the Anonymous Conqueror (Col. de Doc., Vol. I, p. 374): "during the fight they shout and sing, uttering sometimes the most horrid shrieks." (Mr. Prescott speaks of hospitals which "were established in the principal cities." This is doubtful, at least.) The most detailed account of such an engagement is found in Tezozomoc (Cap. LII, p. 84), confirmed in the main by Duran (Cap. XXXVII, pp. 289 and 290), where he describes the disastrous fight of the Mexicans (1479) against the Tlaxaca of Michhuacan. It appears from the description of the former that during this bloody conflict, lasting a whole day, the different tribes moved up in succession and distinct from each other. There is but one instance of a higher tactical move, and this is found in Tezozomoc also (Cap. XCVIII, p. 93). When the Mexicans sallied against Tlaxcallan: "the general Cuauhnochtli commanded that the Chalca should go by one road or path, those of Aculhuacan by another, the Tecpaneca by another, and the Mexicans in the centre where the Tlaxcallans were expected to be; all the other tribes extended in order to take the Tlaxcalteca in the middle" (surround them). Notwithstanding the glowing descriptions of Clavigero, Torquemada, and Ixtlilxochitl, those engagements turn out to be ordinary Indian skirmishes on a large scale, in proportion to numbers, of course, but still after the same principle. These same authors even indicate, involuntarily, that there were less actions of masses, than individual exploits. For instance, Torquemada relates (Lib. II, cap. LXI, p. 183) that the principal chief, dressing himself in the garb of a common warrior, challenged the prominent chieftain of the enemy to single combat and overcame him, which deed decided the fortunes of the day. Ixtlilxochitl ("Hist. des Chichimèques," Cap. XLV) even tells us how a single Tezucan brave alone fell upon the enemy while his own army was yet at breakfast, and put them all to flight. If such stories are true, they militate strongly against the impression which these same authors would convey to us, of formidable hosts, well organized, opposing each other. A commander, responsible for the fate of tens of thousands committed to his guidance, could not expose his own person in such a manner. Either these stories, or the representation of the numbers engaged, and their tactics, are untrue.

"Surgeons" are mentioned both by Mendieta and Torquemada. The Mexican name of surgeon is "texoxotla ticitli" (Molina, I, p. 35). "Texoxqui" means a sorcerer, and

retreat began on one side, and an equally rapid pursuit on the other.¹⁶⁵ The objective point of this retreat was the settlement or "pueblo" of the attacked tribe, but if the vanquished succeeded in placing between them and their pursuers some natural obstacle, like a river, or deep ravine, or if they took refuge upon a wooded range of steep hills, then the victors were arrested, as they seldom ventured to attack when this attack necessitated a strong simultaneous effort on the part of the whole force.¹⁶⁶ Still less could they execute rapid flank-movements. In course of time they might circumvent certain obstacles, but then their supplies were so limited that, if there was no positive indication of success, either in storming the position *without great danger*, or in carrying it within a very *short time* by some rude feint, they preferred to desist from further endeavors, and to return home with whatever spoils the battlefield alone had furnished. Thus they "col-lared"¹⁶⁷ their captives (which had been carefully watched behind the battle-front) and returned to Mexico in moderate triumph, leaving it to future times to proclaim: that such and such a tribe had been subdued by them, whereas they had only defeated it in one engagement, and the tribe had still preserved afterwards its complete independence.¹⁶⁸

"ticitl" a physician or diviner. Both agree very well with the conception of an Indian "medicine-man." There are, besides, evidences that priests went to war also, and I would suggest that it may have been a part of their duties to care for the wounded. A certain class of priests were called "tlamacazqui," certainly derived from "tlama," physician or doctor.

¹⁶⁵ A slow and orderly retreat is a movement hardly known to Indians. They rush either way, advancing or retiring. Even the return of the Mexicans from the unsuccessful onslaught on the Tarasca (Tezozomoc, Cap. LII. p. 84) was as near to a disorderly flight as possible. Durán says (Cap. XXXVII, p. 291): "El rey Axayacatl mandó, 'alçar su real, y así como huyendo y medio afrentado, con la poca gente que le aulia' quedada, todo desbaratado y lo mas de la gente herida."

¹⁶⁶ Mendieta (Lib. II, p. 131): "Those who gained the battle continued the pursuit 'until the opponents reached some place where they could fortify themselves.' Also, Tezozomoc (Cap. XXII, p. 34, and cap. LVII, p. 94).

¹⁶⁷ If, on the battlefield, a captive still resisted, they cut the tendons of his feet, thus rendering him incapable of motion. After the action the prisoners were secured by wooden collars ("cnauh-cozcatl") and thus they were led home in the van of the returning force. Arrived at Mexico they were conducted first to the chief-teocalli, and after prostrating themselves before the idol of Huitzilopochtli, *were marched around the great stone of sacrifices*. (Compare the relation of Adair, "History of the American Indians," Argument XVI, pp. 165 and 167.—Return of a Chikkasah war party from a foray into Illinois, in 1765.)

¹⁶⁸ Such was the case with Meztitlan (Cap. LVII, p. 94, of Tezozomoc, and Durán, Cap. XL, p. 314). Tizocac made about 40 prisoners, and returned with the loss of 300 men ("Y que con aquello aulan los contrarios recogidose a' sus lugares"). Still it is mentioned by Itlixochitl as subject and tributary to the valley tribes.

If the vanquished tribe found no such point of refuge, then the pursuit continued without relenting until the town or settlement itself was reached. Frequently both pursuers and pursued entered it almost at the same time. The torch was applied to the temple first, and an indiscriminate slaughter of non-combatants began.¹⁶⁹

Nothing short of speedy submission to tribute could arrest this butchery. The vanquished, therefore, if not prepared to flee from their homes forever,¹⁷⁰ made signals of peace. A parley ensued, and to it succeeded a surrender on the part of the defeated tribe. Generally one year of tribute was paid in advance, and thus the Mexicans might return homewards loaded, both with the spoils acquired on the battlefield and with the first guarantee of future contributions from the vanquished tribe.¹⁷¹

It sometimes occurred, however, that the tribe attacked had provided its settlement with artificial defenses, and the Mexicans, victorious in the open field, found themselves in presence of the simple fortifications, which we shall hereafter describe, like palisades or even platforms of earth or stone surmounted by parapets. An attack upon these was only attempted if there appeared no doubt as to the result, in consequence of the superiority of the Mexicans, or of the great losses sustained by their defenders in the previous fights.¹⁷² Then, but only then, ladders were con-

¹⁶⁹ The "teo-calli" or temple being in the centre of the settlement, and also its highest, and therefore, according to Indian notions, its strongest edifice, the destruction thereof by fire was the signal of decisive victory of the assailants. See Tezozomoc (Cap. XIX, pp. 80 and 81). Durán (Cap. XV, p. 129).

¹⁷⁰ In cases where the pueblo of the enemy had been completely deserted, either through flight of its inhabitants, or through their extermination, as was the case with Alahuiztlan, these sections were reoccupied by colonies from Nahuatl stock. Tezozomoc (Cap. LXXIV, pp. 125 and 126) and Durán (Cap. XLV, p. 364, etc.) both relate in detail how it occurred. This may account in some degree for the presence of Nahuatlac stock at a distance from the valley, and may yet throw some light even upon the singular colonization of the Peruvian "Mitimaes."

¹⁷¹ This suing for peace, where the tribe was of foreign stock-language, took place, sometimes through interpreters, "nahuatlata," sometimes merely by signs. The defeated generally fled to the top of a hill and from there beckoned to the pursuing Mexicans to stop the carnage, with humble and pitiful gestures. But the first parley did not always result in peace. The massacre of women and children recommenced often twice, ere the tribute offered by the vanquished satisfied the Mexicans. This tribute was exacted in proportion to the resistance offered and to the resources of the tribe. After peace was agreed upon the Mexicans still feasted from the food of those whom they had ruthlessly conquered. The prisoners, once taken, were never released nor exchanged. They had to carry the spoils and tribute to Mexico, but were generally well fed and cared for until the day when they were slaughtered to the idols.

¹⁷² A good illustration is found in Tezozomoc (Caps. XC and XCI), describing the foray against Tututepec and Quetzaltepec. But Durán is still more explicit on the same events. According to him (Cap. LVI, p. 547), after the unfortified pueblo of Tu-

structed,¹⁷³ and with due precaution and under cover of various feints, the walls were scaled.¹⁷⁴ A regular siege was out of the question, the Mexicans not being provided for a protracted stay outside of their territory. They might lie in wait or hover around the enemy's defenses for a short time, bent upon attempting a surprise of some kind, but if the place could not be carried at a rush in some way the assailants finally had to abandon the attack and return home.¹⁷⁵

We have heretofore presupposed that the tribe assailed by the Mexicans had been formally challenged, or at least notified of their coming. But this was not always the case. In many instances the Mexicans made their attack without previous warning, and a nocturnal surprise was attempted which was almost sure to succeed.

It is next to superfluous to venture a description of such a nightly onslaught. The scene, like that of the surprise of any settlement whatever by Indians during the hours of darkness, may be faintly imagined, but not adequately told. The main sallies and entries were occupied by the assailants,—creeping up stealthily,—the chief "teo-calli" surrounded, then the war-whoop was raised, and the miserable inhabitants of the pueblo realized at once that they were doomed. Few survivors only remained on such occasions, and even these, unless the tribe surrendered at the first on-

tepec had been sacked, the Mexicans moved upon Quetzaltepec, which was well fortified, and whose people sallied forth to meet the Mexicans in the open field three days in succession, until the third day at last they were signally defeated, and the defenses scaled in a rush.

¹⁷³ Tezozomoc (Caps. XC and XCI). Durán (Cap. I, VI, p. 448). The former describes these ladders ("escalas") minutely, giving their size and the number used.

¹⁷⁴ Tezozomoc speaks of archers posted outside, protecting by a shower of missiles the ascent of the scaling party or parties, while other bodies were burrowing through the wall. Durán gives a more plausible statement (p. 448): "Otro día salió al campo la gente tepaneca con toda su provincia, que era gran numero de gente, la qual se uvo tan valerosamente, que no los pudiendo resistir los de la ciudad, se empearon a re-traer hacia el muro. Monteguma, viendo que los tepanecas peleaban tan valerosamente y que hacian retirar al enemigo, mandó tocar al arma, y en un punto salió el Mexicano al campo y por otra parte el tezcucano, y arremetiendo todos de trapel, apellidando los unos Mexico, Mexico, los otros Tezcuco, Tezcuco, acudieron cada uno por su parte rompiendo por el exercito de los enemigos; y aunque de las murallas recibian gran daño de las piedras grandes y troços de palos que arrojaban, llegaron a ella y arrimando escalas, y otros, como gatos, subieron por ella, y otros cabando por el cimientio ganaron la primera cerca." This shows that indeed it was carried at a rush.

¹⁷⁵ For this reason the wars with the neighboring tribes of Tlaxcallan, Huexotzinco, and Cholullan, took the shape of regular fights at stated times. A long campaign was out of all question. We may, in the course of this essay, investigate shortly the question of the wars between Mexico and Tlaxcallan, although it is not properly pertaining to the object of the present discussion.

set, were all carried into captivity except such as could escape into the wilderness lying beyond their cultivated areas of soil.¹⁷⁶

The Mexicans, however, were not exclusively successful on their numerous forays and expeditions. More than once they met with severe defeats, and on one occasion even, in their attack upon Michhuacan, in 1479, they were so terribly beaten that they never afterwards renewed the attempt.¹⁷⁷

Besides, in their constant wars against the rival confederacy, also of "Nahuatl" stock, at whose head was the tribe of *Tlaxcallan* or *Tlascala*, the fortunes of the day often turned against the Mexican invaders, or at least assailants.¹⁷⁸ In the first instance, that of the defeat in Michhuacan, the Mexicans actually fled from the battlefield in consternation, pursued by the victorious enemy across the "war-ground," but no further.¹⁷⁹ The engagements with the tribes of *Tlaxcallan*, *Huexotzinco*, or *Cholula*, were fought so near the valley that even if the Mexicans had been worsted during the day, they could retire quietly and mostly unmolested the next morning.¹⁸⁰ The manner in which such retreats were carried on is hardly known.

¹⁷⁶ Tezozomoc (Cap. LXXXIV, p. 148) describes as follows the attack upon Nopallan and Ycpatepec: "Arriving at midnight, they moved so secretly that they reached the royal house, counted the entrances and sallies, ascended to the top of the temple," etc., etc. Then the scouts returned to the main temple, reporting upon what they had found, and when the morning star arose they fell upon the settlement, "each body moving like a strong wall and with the swiftness of lightning, . . . and they began to slaughter so furiously that neither old people, nor women, nor children were spared, and they set fire to the houses, also to the temple, so that the place looked like a volcano." (Compare the reports upon the burning of Schenectady by the French and Indians, in 1689,—contained in vol. I, of "Documentary History of the State of New York," pp. 297-312.)

¹⁷⁷ Tezozomoc (Cap. LII). Durán (Cap. XXXVII). The date is fixed by Señor Alfredo Chavero, of Mexico, in his valuable essay entitled "Calendario Azteca" (p. 4).

¹⁷⁸ This confederacy consisted of *Tlaxcallan* and *Huexotzinco*,—perhaps also *Atlixco*. *Cholula* may, to a certain extent, have been included in it, but it was certainly not any longer the case when Cortés arrived. On the contrary, *Cholula* was then on friendly terms with Mexico. Cortés says ("Carta Segunda," Vedia I, p. 19): "porque los naturales della eran amigos de Muteczuma;" and, further on (p. 21), "y fice que los desta ciudad de Churultecal, y los de Tascaltecal fuesen amigos, porque lo solian ser antes, y muy poco tiempo habia que Muteczuma con dadas los habia aducido a su amistad, y hechos enemigos de estotros."

¹⁷⁹ The pursuit lasted until they reached *Tlaximaloyan* (*Tagimaroa*), at the confines of *Toluca*. Tezozomoc (Cap. LII, p. 85): "Llego' el campo Tarasco hasta Tagimaroa, que dizen Tlaximoyalan: los otros que habian llegado hasta los terminos de Toluca se volvieron, viendo que su campo no llegava: ni iba adelante." The pursuit of the Michhuacanese consisted in harassing the Mexicans with archers, but no close combats are mentioned.

¹⁸⁰ The wars of the Mexicans against *Tlaxcallan* and its associates were a struggle for definitive supremacy, and not, as many authors have it, pre-arranged regular bat-

Until now we have considered the Mexicans only when in conflict with tribes of their own country and race, inferior or equal to them in degree of culture, and proportionately in military resources. But we must necessarily cast a glance upon their wars against their subsequent conquerors, the Spaniards, and investigate how far our pictures of the organization and the military tactics of the Mexican tribe are confirmed by the events of the conquest. Ere, however, we enter upon this discussion, which shall also furnish us with an illustration of *defensive* Indian warfare in Mexico, it is urgent that we should become acquainted with the nature of *fortifications* erected and used by the aborigines.

While there exists distinct evidence that walls of stone were erected occasionally for the defense of certain positions *not directly connected with*, or in the *immediate vicinity of, settlements*, such instances are very rare. Such is the famous wall by which the Tlaxcallans closed the valley of their eastern confines.¹⁸¹ In general, the conception of the tribes of Mexico in fortifying any particular place, amounted to *raising it above the surrounding level*, and crowning this raised area with a *parapet* of stone or wood. It is not quite clear whether the elevation extended *always* to the

ties, for the purpose of mutually obtaining victims for religious offerings, and for the exercise of the young men in the art of war. The fact that these battles took place at fixed days and at certain places appointed, is no proof of the latter, but it simply resulted from the custom of challenging an enemy, and meeting him therefore at a specified time and on the "war-ground." (Compare Durán, Cap. LIX, p. 468). The respective forces being quite evenly matched, these actions were renewed from time to time, each party hoping to tire out the other, until to be able to strike a decisive blow; but neither succeeded so far, so that in fact the battles remained practically undecided. Against Tlaxcallan the Mexicans made one great attempt, when the confederacy of the former with those of Huexotzinco was broken up for a short time, and the latter applied to Mexico for assistance against the Tlaxcallans, who had invaded the soil of Huexotzinco. There is as yet a great deal of contradiction and obscurity in regard to those inter-tribal wars, and the pompous descriptions thereof by many authors are scarcely trustworthy. One point appears positive, that however often the Mexicans may have been the worst sufferers in these fights, neither the Tlaxcallans nor their allies were ever able to threaten Mexico seriously. In course of time there is hardly any doubt but that the Mexicans would have tired out and conquered their adversaries, as they had previously tired out and finally subjugated the tribe of Chalco, in the valley. For a truly natural description of these engagements, I refer the reader to the pages of Durán, and especially of Tezozomoc.

¹⁸¹ See Cortés ("Carta Segunda," Vedia I, p. 15): "E a' la Salida del dicho valle fallé una gran cerca de piedra seca, tan alta como estado y medio, que atravesaba todo el valle de la una sierra a' la otra, y tan ancha como veinte piés, y por toda ella un petril de pié y medio de ancho, para pelear desde encima, y no mas de una entrada tan ancha como diez pasos, y en esta entrada doblada la una cerca sobre la otra a' manera de rebelin, tan estrecho como cuarenta pasos . . ." Also, Bernal-Díez (Cap. LXII). Gomara (p. 326). "El primer rencuentro que Cortés tobo con los de Tlaxcalan". Torquemada (Lib. IV, cap. XXIX). Herrera (Dec. II, lib. VI, cap. IV).

area of the settlement thus enclosed, forming a terrace or platform, or whether it merely constituted a *belt around it*. As principal means of *protection*, they resorted to *elevation*.¹⁸²

The pueblo of "Quauhquechollan (now Huacachula, in the State of La Puebla), lying to the South-east of Mexico, and tributary to the Mexicans in 1520, was considered very strong, and Cortés has left us the following description of its natural as well as of its artificial defenses:—

"This town of Guacachula lies on a plane, protected on one side by a high and steep hilly range, and on two sides by two rivers, distant from each other about two cross-bow shots. Both rivers run in deep and precipitous gorges; there are, consequently, but few places where an entrance could be effected, and even these are of difficult access, steep of descent and of ascent, on horseback. The place is surrounded by a strong wall of line and stone, outside of the city as high as four fathoms, and almost level with the ground inside. A parapet one-half fathom in height runs along the top of this wall. For to sally there are four entrances wide enough for a horse-man to pass through; at each entrance there are three or four folds of the enclosure entering one into the other; on each fold of the wall a corresponding breastwork. Along the entire enclosure they have heaps of stones and pebbles, with which they fight."¹⁸³

This idea of constructing the pueblos on a mountain declivity, so as to be compelled to artificially protect *but one or two sides alone*, we find in several instances. The place of Chamula in the present State of Chiapas, when attacked by the Spaniards under

¹⁸² Motolinia ("Historia de los Indios de Nueva-España." Trat. III, Cap. XVI, p. 229), speaking of Tlaxcallan: "Their reason for building in high places was that in order to feel more safe during their frequent wars, they looked to high and open places, where they might sleep with less anxiety, since they had neither doors nor walled enclosures, although they had entrenchments and fortifications ('albarradas y reparos') in some places, they being sure of war to occur every year." The Mexican name for tribe, or settlement, or pueblo, "altepetl," itself indicates an elevated object, the word "tepetl" signifying "mountain" or "hill."

¹⁸³ "Carta Segunda (Vedia I, p. 50); also, Bernal-Diez (Vedia II, cap. CXXXII, p. 143), and several others. Clavigero (Lib. IX, cap. XXVIII) says that the walls of Quauhquechollan were fully 20 feet high, 12 feet wide, and had a parapet of 3 feet in elevation. The fathom: "Estado," "Braza," or "toesa," is equal to 2 "varas," or to 6 Castilian feet. According to this the wall would have been about 6, 68-100 metres above the outer surface, or 22 feet, English. The text of Cortés reads: "tan alto como cuatro estados por de fuera de la ciudad, e' por de dentro esta' casi igual con el suelo." This would indicate that the "wall" was rather a *facing* of stone to a *large terrace*, upon which the pueblo itself had been erected.

Diego Godoy, in 1524, was situated on a high and steep hill or ridge, surrounded by a gorge. The ascent was very difficult, and when the Spaniards had reached a certain height they met a palisade of timbers set crosswise into the ground, and tied together. Higher up there was a wall two fathoms high and four feet wide, of earth and stone, with some posts. In the most rugged corner there was a ladder leading upwards. The wall was surmounted by a guard of strong planking held between timbers set both within and without. Besides, vines of great thickness, and ropes, were fastened to the planks.¹⁸⁴

In some cases, several tiers of enclosures or platforms, one above the other and surmounted by parapets, covered one side of a mountain-declivity. The dwellings of the people rested on the highest terrace, within the uppermost circumvallation, but huts or bowers sheltering the warriors were erected even on the outermost defenses. Such appears to have been the condition of Quetzaltepec,¹⁸⁵ before it was captured under the last Montezuma,

¹⁸⁴ Chamula, or "Chamhó," according to the late Mr. Brasseur ("Ruines de Palenqué," Cap. II, p. 33, Note No. 10) is still the most populous place of the State of Chiapas, and lies about three leagues to the N. W. of San Cristobal. Its inhabitants speak the "Totzil" language. They were never conquered, perhaps not even attacked, by the Mexicans. The description of its fortifications is from the "Relacion hecha por Diego Godoy a' Hernando Cortés" (Vedia I, p. 466). Bernal-Diez (Cap. CLXVI) and Herrera (Dec. III, lib. V, cap. VIII, p. 163) mention it also. We meet here with a plain description of earthen or stone embankments surmounted by *guards of wood*. This may throw some light on some of the circumvallations found in the United States, and ascribed to the "mound-builders." (A still more detailed description, of a similarly fortified place, is given by Cortés himself in his fifth letter. 3 Sept., 1526. (Vedia, I, p. 128). Compare "Hist. de la Conq. y Reduccion de los Itzaes." Lib. I, cap. VII, p. 41).

¹⁸⁵ For a description of Quetzaltepec ("Mountain of brilliant or changing green hues") see Tezozomoc (Cap. XC, pp. 158 and 159), and especially Durán (Cap. LVI, p. 443): "porque Tototepec, demas de tener el río grande por amparo, hizo hacer cinco cercas las mas fuertes que pudo, todas de piedra y tierra muy apisonada y de maderas grandes y de todo género de fagina. Acauadas estas cercas, que la que cercaua el pueblo era de seis braças en alto y de quatro en ancho, siendo las demas que se les iban siguiendo de a' quatro y de cinco en alto," Although Durán uses the expression "cerca" (enclosure), there is little doubt but that they were but *platforms*, surmounted by stone or wooden parapets. Tezozomoc (Cap. XC), while speaking of six works ("albarrada," or "paredon"), distinctly mentions that there were huts or houses on them ("Luego mandó poner fuego á la segunda albarrada, que tenían encima mucha caseria de buhios," "El primer paredon era de cinco braças de ancho, y de tres de altura, y mucha peña encima; la segunda, tercera y quarta al proprio tenor, excepto la sesta que era de dos brazas de altura y de seis brazas de ancho, muchos buhios encima, zacales, y mucha gente," p. 158). We are forcibly reminded here of the hill of Sacca-huaman, at Cuzco, in Peru, whose defenses consist, according to the Hon. E. G. Squier: "of three lines of massive walls, each supporting a terrace and a parapet. The walls are nearly parallel, and have approximately accurate entering and reëntering angles for their total existing length of 1,800 feet. The first or outer wall has an average present height of 27 feet; the second wall is 35 feet within it, and is 18 feet high;

and it is not improbable that the celebrated "pyramid of Xochicalco" may yet prove to have been a fortified pueblo, analogous to or of the type just described.¹⁸⁶

"the third is 18 feet within the second, and is, in its highest part, 14 feet in elevation. The "total elevation of the works is therefore 59 feet." According to the descriptions of Tezozomoc and Durán the fortifications of Quetzaltepec were very similar to, only perhaps more extensive, even, than those of the Ynca stronghold, at Cuzco. In the art of fortification, however, the Ynca of Peru were far in advance of the other American aborigines. Nowhere else, on this continent, do we find anything near alike to Ollantaytambo. Pisac, or Piquillacta. Mexican fortified pueblos were probably analogous to the "pucara" or strongholds of the Aymara Indians on the Bolivian high-plateau. (See E. G. Squier: "Peru, Incid. of Travel and Explor. in the land of the Incas," New York, 1877.)

¹⁸⁶ "Xochicalco," the "place of the house of flowers" ("xochitl," flower,—"calli," house), is situated near Temisco, S. E. of Cuernavaca (the ancient "Quauhnhuac"), in the State of Mexico proper. The pyramid was probably first described by Don Joseph Antonio Alzate y Ramirez, Mexico, 1791. "Description de las Antiquidades de "Xochicalco." Robertson (Note XXXIX, to p. 139, of vol. III) describes a pyramid: "a temple near Cuernavaca, on the road from Mexico to Acapulco." The most complete descriptions, however, are those of Pietro Marquez ("Due antichi monumenti di architettura Messicana," Roma, 1804); of Baron A. von Humboldt ("Vues des Cordillères et Monuments des peuples indigènes de l'Amérique," pp. 129 to 137 of the Edition 8vo "of 1816, vol. I. and plate No. IX of the Atlas in folio); of Nebel; of E. Tylor ("Anahuac"), and of Brantz-Mayer ("Mexico as it was and as it is," 3d Edition, 1847). Lord Kingsborough has of course furnished splendid illustrations of the monument, in vol. IV of the "Antiquities of Mexico," and a description by Capt. Dupaix, in vol. VI, p. 430. Also has Mr. H. H. Bancroft, with the usual faithfulness to his sources, characteristic of this eminent compiler. We quote from Brantz-Mayer (p. 178): "From this eminence the guide . . . pointed out to me a small mountain, at the "extremity of the plain in front, on which was situated the Pyramid of Xochicalco, "the subject of our day's explorations. The *cerro* appears to rise directly out of the "levels between two mountains, and the plain continuing to its very foot, might seemingly be traversed in half an hour." But this intervening space was cut up by deep gullies (barrancas), making the trip to the hill very tedious, difficult, and lengthy. The author's general description of the eminence is as follows (pp. 180 and 181): "At the "distance of six leagues from the city of Cuernavaca, lies a *cerro*, three hundred feet "in height, which, with the ruins that crown it, is known by the name of Xochicalco, "or 'the Hill of Flowers.' The base of this eminence is surrounded by the very distinct remains of a deep and wide ditch; its summit is attained by five spiral terraces; "the walls that support them are built of stone, joined by cement, and are still quite "perfect; and, at regular distances, as if to buttress these terraces, there are remains "of bulwarks shaped like the bastions of a fortification. The summit of the hill is a "wide esplanade, on the eastern side of which are still perceptible three truncated "cones, resembling the tumuli found among many similar ruins in Mexico. On the "other sides there are also large heaps of stones of irregular shape, which seem to "have formed portions of similar mounds or tumuli, or, perhaps, parts of fortifications "in connection with the wall that is alleged by the old writers to have surrounded the "base of the pyramid, but of which I could discern no traces." On the top of this esplanade there seems to have been an edifice of five terraces (as Alzate relates), or stories, but only the lowest one is yet in existence. Nebel has given an ideal reconstruction of this building ("Viaje pintoresco y arqueológico a la Republica de Mexico"), also Alzate. Closing his investigation of the ornaments and sculptures still visible in the ruins of the summit, Brantz-Mayer remarks: "The day was far advanced when I "stood for the last time on the corner-stone of the upper terrace and looked at the "beautiful prospect around me. It was the centre of a mighty plain. Running due "north were the remains of an ancient paved road, leading over prairie and barranca

But the great majority of the Indian "towns" of Mexico were

"to the city (Quauhnahuac) distinctly visible at the foot of the Sierra Madre" (p. 187). Baron Humboldt gives the measurements as follows: Height of the hill from its base, 117 mètres (about 380 feet), divided into five tiers. Each tier is about 20 mètres high. Circumference of the hill-base about 4,000 mètres (13,000 feet). Summit platform 72 mètres long, from N. to S., and 86 m. from E. to W. The wall once enclosing this platform was about 3 m. in height. Base of the top-edifice, 20 m. 7' by 17 m. 4'. On the north side there are a number of excavations in the rocks, artificial caverns, whose openings Brantz-Mayer found "at the foot of the first terrace on the northern side of the hill." These excavations *are said* to have been visited in 1825.

Baron v. Humboldt concludes: "Le fossé dont la colline est entourée, le revêtement des assises, le grand nombre d'appartemens souterrains creusés dans le roc du côté du nord, le mur qui défend l'approche de la plate-forme, tout concourt à donner au monument de Xochicalco le caractère d'un monument militaire. Les naturels désignent même encore aujourd'hui les ruines de la pyramide qui s'élevait au milieu de la plate-forme, par un nom qui équivaut à celui de château fort ou de citadelle. La grande analogie de forme que l'on remarque entre cette prétendue citadelle et les maisons des dieux azteques (teocallis), me fait soupçonner que la colline de Xochicalco n'était autre chose qu'un temple fortifié" (p. 134, vol. I of ed. 8vo).

E. B. Tylor ("Anahuac," Cap. VII, p. 186), speaking of Xochicalco, says: "It was a fortified hill of great strength." Humboldt makes of it: "a fortified temple." But the hill is too high and too large for such a purpose alone. Besides, the rooms excavated in the rock, analogous to the "cliff-houses" of Arizona, the road leading originally towards Quauhnahuac, the central position of the hill itself;—all tends to indicate that "Xochicalco" was once a *pueblo*, fortified after the principles prevailing among the *aborigines*, and whose inhabitants dwelt partly in the rock, partly on the tiers or on the esplanade into which the summit had been levelled. The "teocalli," or temple, occupied the hill-top, being there as well in the centre of the population as in any *pueblo* situated on the level of the plain. The five tiers or terraces were probably lined with wooden parapets, long since decayed, and only the uppermost platform had a stone enclosure.

Another pyramidal structure, found by Capt. Gul. Dupaix, near Old Tepexc, in Tehuantepec, is represented on Plate I, part III, vol. IV, of Lord Kingsborough's "Antiquities of Mexico." It is composed of eight stories or tiers. Capt. Dupaix remarks (Kingsborough, Vol. VI, p. 467): "This wall exhibits a species of fortifications which I cannot persuade myself was ever known to the inhabitants of the Old Continent." This structure has more analogy, in its outlines, with the picture given by Clavigero of the great "teo-calli" of Mexico, than any other. The drawing by the learned Abbé is entirely faultive as far as the Mexican temple is concerned, but it is not out of place when applied to a fortified pueblo, occupying an entire hill.

When the Mexicans, previous to their flight into Culhuacan and subsequently into the lagoon, were hemmed in on the hill of Chapultepec by the tribes of the valley, they fortified the hill in the following manner, according to Durán (Cap. III, pp. 27 and 28): Their newly elected war-chief (Huitzilihuitl) directed that "along the entire declivity of the hill many stone walls should be constructed, arising one above the other like steps, one fathom in width, thus leaving above a spacious square where all gathered and fortified themselves, keeping watch diligently day and night, placing the women and children into the centre of their troop, preparing arrows, macanas, darts, cutting stones, making slings for their defence." According to this paragraph, the hill of Chapultepec would have presented an appearance, perhaps, not entirely dissimilar to that of Xochicalco, or Tepexc,—terraced, like the "andenes" of Peru. Cervantes-Salazar, whose "Tres Diálogos latinos," or "Mexico, in 1534," have been republished, in 1873, by Sr. Icazbalceta (to whose great kindness I take occasion to offer a humble tribute of gratitude), seems to allude to remains of this original grading in his 3d dialogue, when Alfaro (one of his personages) inquires (p. 277): "Para que son estas gradas tan anchas y largas, que llegan hasta arriba, y rodean casi todo el cerro?" Fur-

open places, without circumvallations or enclosures,¹⁸⁷ constructed after the plan which we have already exposed,¹⁸⁸ and without any other strongholds than their massive communal dwellings, and the pyramidal temple, or "teo-calli."¹⁸⁹ On the flat roofs of the former heaps of stones could be collected and hurled down upon the enemy from behind a guard of planks or adobe running along the edge of the roof.¹⁹⁰ The truncated pyramid, on its graded ascent, afforded room for a number of combatants.¹⁹¹ Both gave the re-

ther on he says: "Como se va adelgazando el cerro hasta la eremita," and "Zuazo" makes the very characteristic reply: "Así vino bien para que se pudiera ver todo lo que está abajo." (As a military position would indeed require.) In the Introduction to this Dialogue (p. 236), the learned Mexican scholar remarks: "Parece que estas al-barradas o' escalones se conservaron hasta despues de la conquista, y que los emper, adores Aztecas los habian llenado de tierra, convirtiéndolos en jardines, por no tener ya objeto como obras de fortificacлон."

¹⁸⁷ The letter written by "Fray Francisco de Bologna," from Mexico, to the provincial of Bologna, published in the French translation by Mr. Ternaux-Compans ("Recueil de pièces, etc.") says: "Généralement leurs villes n'étaient pas fermées, mais les es-pagnols leur ont appris à les entourer de murailles" (p. 212). The Mexican tongue distinguishes "altepetl," a pueblo (or tribe), from "tename-altepetl," a pueblo surrounded by a wall ("tenamitl" "muro," walled enclosure). The Quiche-language of Guatemala has adopted the Nahuatl word "tenamitl," changing it into "tinamit," to signify a tribe or place.

¹⁸⁸ Motolinia ("Hist. de los Ind. de N. España," "Col. de Doc.," Vol. I, trat. I, cap. XII, pp. 63-65.

¹⁸⁹ Motolinia (Trat. III, cap. XVI, p. 229. Id. III, cap. VIII, p. 187). Clavigero (Lib. VII, cap. XXVI).

¹⁹⁰ When the Spaniards entered Cholula they soon found out, according to Cortés ("Carta Segunda," Vedia I, p. 20) and Bernal-Díez (Vedia II, cap. LXIII, p. 78), "that the roofs were covered with pebbles and lined with guards of adobe." The Tlaxcalans had previously warned Cortés about Cholula, saying (p. 19 "Carta Segunda"): "y que tenían muchas de la calles tapiadas, y por las azoteas de las casas muchas piedras, para que despues que entrásemos en la ciudad tomarnos seguramente y aprovechar de nosotros à su voluntad." They also warned him about Mexico, saying: "that all the roofs were flat, with guards like breastworks, so that they might fight from the house-tops" (Bernal-Díez, cap. LXXVIII). During the street fights previous to the retreat of Cortés on July 1st, 1520, and also during the gradual capture of Mexico, the Mexicans fought desperately from the roofs, hurling stones, rocks and pebbles upon the assailants. See Cortés ("Carta Segunda," Vedia I, pp. 41, 42 and 43; "Carta Tercera," pp. 74, 76, 84, 86). Bernal-Díez (Vedia II, cap. CXXVI, pp. 130, 131; cap. CLI, p. 183). I refrain from quoting later writers, who copied mostly from the eye-witnesses' reports, and merely add the words of Fray Toribio de Parédes (Motolinia), in his History, written about 1540. ("Col. de Doc.," I, trat. III, cap. VIII, p. 187 "Estaba Mexico muy fuerte y bien ordenada, . . . Tenia por fortaleza los templos del demonio y las casas de Motecuzoma, señor principal, y las de los otros señores."

¹⁹¹ Cortés ("Carta Segunda," p. 42): "Y en la torre muy alta y mas principal della se subieron fasta quinientos Indios, que segun me parécio, eran personas muy principales. Y en ella subieron mucho mantenimiento de pan y agua y otras cosas de comer y muchas piedras; é todos los mas tenían lanças muy largas con unos hierros de pedernal mas anchos que las de las nuestras, y no menos agudos; é de allí hacían mucho daño à la gente de la fortaleza, porque estaba muy cerca della. La cual dicha torre combatieron los españoles dos à tres veces y la acometieron à subir; y como era muy alta y tenía la subida agra, porque tiene ciento y tantos escalones; y los de arriba es,

source of fighting *under shelter from above*, while the assailant had to struggle *unprotected from below*. As against an *Indian* foe, these massive constructions were *indeed strongholds*, and even, as we shall hereafter see, they opposed strong obstacles to the Spaniards. Nevertheless, as often as it was possible, the aborigines added to the defensive means of their architecture the resource of a *strong natural position*, and *those* tribes proved to be most *powerful* and *aggressive*, whose *defensive* position was either naturally or artificially, or in both respects, *the least vulnerable*.¹⁹²

We have already mentioned the pueblo of Mexico as one of the strongest positions ever occupied by Indians up to the sixteenth century. Still, it was an open place, without circumvallations or

"*taban bien pertrechados de piedra y otras armas, . . .*" Bernal-Díez (Vedia II. cap. CXXVI, p. 131). The latter, in the very "likely" style of the "*Historia Verdadera*" (?) mentions 4,000 men as having occupied "*one teocalli*." Cortés is more modest and certainly nearer the truth. See, also, Motolinía (Trat. III, cap. VIII, p. 187. "*Tenia por fortaleza los templos del demonio*"). When the Mexicans conquered Tlatilulco, the principal stronghold of the Tlatilulcans was their *temple*. See Tezozomoc (Cap. XLV, p. 74). Durán (Cap. XXXIV, p. 268: "*el rey subió a' lo alto del templo con otros canalleros suyos aunque con mucho trabajo por la mucha resistencia que halló*"). We again refer to what has already been stated: that the temple being the highest, and therefore strongest, part of the pueblo, its capture or destruction was the signal of victory.

¹⁹² The tribes of Chiapas were much feared on account of their ferocity, and of their naturally and artificially strong places. Compare Bernal-Díez (Cap. CLXVI, p. 225, "*porque ciertamente eran en aquel tiempo los mayores guerreros que yo había visto en toda la Nueva-España*"). Cachula, Chiapas, and Chamula, were all naturally and by art well fortified. We have already alluded to Atitlán, in Guatemala (Report of Alvarado, Vedia I, p. 460. Bernal-Díez, Vedia II, cap. CLXIV, p. 221: "*y que eran muy malos y de malas condiciones*"). Tlaxcallan itself enjoyed a very strong defensive position, although the place was open and not enclosed. Motolinía (Trat. III, cap. XVI, p. 229: "*El señor mas antiguo y que primero lo fundó, edificó en un cerro—Jon alto, que se llama Tepeticpac, que quiere decir encima de sierra*"). Cortés ("*Carta Segunda*," p. 18: "*porque es muy mayor que Granada y muy mas fuerte*"). Torquemada (Lib. III. cap. XII, p. 265). Gomara ("*De Tlaxcallan*," Vedia I, p. 333), etc., etc. Utlatlan, or rather "Gumarcaah," the Q'Quiché pueblo of Guatemala, of which Fuentes especially has made the capital of a vast "empire of Quiché," was a very strongly situated place. (See Stevens' "*Travels in Central America, Yucatan, and Chiapas*."). The village of Santa Cruz del Q'Quiche now stands in the vicinity. Alvarado, its conqueror, reports (Vedia I, p. 458): "*as the city is most remarkably strong, and has not more than two entrances, one by thirty and some, high steps of stone, and the other by a dyke made by hand*." The Abbé Brasseur describes it as follows ("*Popol-Vuh*," cap. IX, pp. 312 and 313, foot-note): "*Utatlan or Gumarcaah was composed of three distinct plateaux, surrounded by ravines communicating however by paths (or roads) flanked by cut stones There was but one entrance to this great town, the same by which it is now reached. (The Q'Quiché text says: "where the town with its ravines was built of stone and lime and covered with cement.") Thus we have the principal pueblos of Middle America all established in strong defensive places, for Mexico, as we have already said, was perhaps the least vulnerable of all, and also the one which occupied the most prominent position.*"

walled enclosures.¹⁹³ But it was surrounded by *water* on all sides. This was a *natural* protection, *apparently*. However, the lake around Mexico was the work of the Mexicans themselves, and deserves, as such, to be regarded as an evidence of no ordinary skill on their part. When they fled into the space subsequently transformed into a lagoon, it was an extensive swamp, covered with canebrake. Many parts of it could be waded through with ease, at some places the streams emptying into it from the West filtered through the deeper channels into Lake Tezcuco. Flakes of turf or of sand occasionally protruded over the surface, and on one of these dry spots the Mexicans huddled together for existence.¹⁹⁴ Unmolested on account of their extreme weakness, they could extend this area of dry soil by additions of sod, by scanty artificial foundations of turf thrown into the shallow morass and, erecting upon it their frail dwellings, they lived in poverty until they found out the great advantage which this isolated position gave to them over the surrounding tribes. They realized that, while *they* might sally forth with impunity, having a safe retreat behind them, an attack upon *their* position was both difficult and dangerous for the assailant. Once *their* first attempt crowned with success they continued and, valuing their situation as the main element of strength, they improved the foothold on the mainland by compelling subjected tribes to build for them a causeway, running from the outlet of Lake Xochimilco northward, to the pueblo of Mexico.¹⁹⁵ This dyke, while it insured communication with the mainland, penned up the waters flowing into the swamp from the west-side, and *accumulated* them there.¹⁹⁶ On

¹⁹³ Motolinia (Trat. III, cap. VIII, p. 187). When the Tlaxcallans represented to Cortés the dangers to which he exposed himself by going to Mexico, they did not mention fortifications (Bernal-Díaz, LXXVIII, p. 70), but simply how the place was surrounded by water, the strength of the houses, and their difficult access.

¹⁹⁴ Tezozomoc (Cap. I, p. 5). Durán ("Hist. de las Yndias de Nueva España," Cap. IV, pp. 36 and 37) is very explicit: "y pasados por la otra parte del río (the outlet of Lake Xochimilco) metteronse en los carrizales y tulares de la laguna." "Deste lugar vinieron buscando y mirando si allarian algun lugar que fuese acomodado para poder hacer asiento, y andando desta manera por unas partes y otras entre las espaldas y carrizales, allaron un ojo de agua hermosísimo." Mendieta (Lib. II, cap. XXXIV, p. 148). Torquemada (Lib. II, cap. X and cap. XI, p. 92).

¹⁹⁵ Durán (Cap. XII, p. 112): "pues vuelto a' los de Xochimilco les mandó que luego, sin mas tardar, mandasen a' todos los de la ciudad hiciesen una calçada de tres brazas en ancho desde su pueblo hasta la ciudad de Mexico, de piedra y tierra, cegada en el agua quel termino desta calçada tomase, y hiciesen sus puentes á trechos para que el agua tuviese por donde salir de una parte a' otra." (Also, Cap. XIII, p. 113.)

¹⁹⁶ We must remember that the level of the "plaza mayor" of Mexico was, towards the beginning of this century, but one "vara" (of three Castilian feet), one foot and

the other hand, the fresh water emptying out of Lake Xochimilco was thrown to the east side of the dyke into Lake Tezcuco. By this simple contrivance the Mexicans surrounded their pueblo with a huge pond on all sides, isolating, or rather *fortifying* it beyond all conceivable means of Indian assault.¹⁹⁷ *The causeways leading to Mexico were, therefore, military constructions.*¹⁹⁸ Subsequently the dyke was continued to the north until where Guadalupe Hidalgo now stands (anciently Tepeyacac), thus closing up the western basin completely, and another causeway, running east and west was constructed to Tacuba. From the southern dyke a branch ran to Cuyuacan, starting at Xoloc and extending to the southwest. In order to insure free circulation of the waters, sluices were cut, which interrupted the causeways at several places. Wooden bridges, easily removable, were laid across these ditches. Thus Mexico needed no outer fortifications nor walled enclosures.¹⁹⁹

one inch higher than the level of Lake Tezcuco. This elevation was purely artificial (Humboldt, "Essai politique sur la Nouvelle Espagne," Paris, 1827. Vol. II, pp. 96, 97 and 98). After the causeways running north and south had been constructed, the waters emptying into the swamp from the west side could not any longer run freely into the salt-water basin of Tezcuco. They were actually kept around the pueblo, and the swamp thus changed into a lagoon. That those sources were powerful enough for such a purpose is amply shown by the great inundation which their careless opening occasioned under Ahuitzotl, in 1498 ("Essai politique," Vol. II, p. 101), of which the old authors bear ample testimony. (Durán, Cap. XLVIII and XLIX.) (Tezozomoc, Cap. LXXX.) (Ixtilxochitl, "Hist. des Chichimèques," Cap. LXVI.) (Torquemada, Lib. II, cap. LXVII, pp. 192 and 193.)

¹⁹⁷ The levels of Lakes Xochimilco and Chalco are 1 vara 11 inches higher than the "plaza mayor" of Mexico. Their outlet is to the northwest, between Churubusco and Iztapalapan. Previously, when Mexico was surrounded by water, this outlet was between Mexicalzinco and Churubusco (then called "Huitzilopochco"). At Churubusco the great causeway began, and the waters emptying out of Lake Xochimilco flowed along its right hand side into Lake Tezcuco. The causeways thus increased the effects of natural drainage upon the central basin. It was certainly a very primitive but very effective work on the part of the Mexicans. We find a parallel to it, at a comparatively recent date, in Bolivia. When Andrés Tupac Amaru, the son of the unfortunate José Gabriel Condorcanqui, was blockading Sorata, in 1782, he could not, without artillery, hope to succeed against the well fortified town. Therefore, by a system of circumvallation, he enclosed the town with the waters of the Sierra, which finally destroyed the earthworks, leaving the entrance free to the infuriated Indians. 22,000 whites perished in the massacre ensuing.

¹⁹⁸ It is to the Hon. L. H. Morgan that we owe the first intimation in regard to the true character and purpose of these causeways. They were not merely for the purpose of insuring communication with the mainland, but especially for the defence of Mexico. Without them the area extending between the pueblo and the western shore would, at best, have remained a swamp, or would have become, as it now is, dry land. In both cases the defensive power of the Mexicans was at an end, and the course of events in Mexico would have turned quite differently.

¹⁹⁹ Mention is made of a fortification of some kind at "Xoloc," where the branch, dyke from Cuyuacan joined the main causeway. (This must have been in the neighborhood of San Antonio.)

An attack by water could easily be repelled from the housetops, and with the aid of the numerous canoes.²⁰⁰ An Indian host, advancing upon the causeways, found serious impediments in the cuts converted into trenches by removal of the bridges. Against a sudden onslaught, a surprise, Indian fashion, Mexico was therefore amply secure,²⁰¹ nothing short of a siege might overcome its defenses. But no Indian force alone could attempt and carry out such an undertaking; it required the resources which the *Spaniards*, as *European soldiery*, possessed.

The effect of the first contact of the whites with the Indians of Mexico was to astonish, nay, to stupefy, the latter. They *felt*, rather than realized, that the few people who ventured so unconcernedly in appearance, among largely superior numbers, should possess superior resources to counterbalance their numerical inferiority. But the true nature of these resources was unconceivable to them, and they had no time to improve as the emergency would have required. Thus their warfare against the Spaniards became limited to all they might achieve according to their actual state of culture, and if they succumbed in the struggle, we need not be surprised. Besides the vast inferiority in armament, there existed a proportionate one in military tactics. In the words of the most celebrated author on the History of the Conquest: "They knew not how to concentrate numbers on a given point, "or even how to sustain an assault, by employing successive detachments to support and relieve each other. A very small portion only of their array could be brought into contact with "an enemy inferior to them in amount of forces."²⁰² We may add that their tactical conceptions did not go beyond the rude snares invented by savage cunning, and in their first encounters with the Spaniards (when they yet relied upon numerical superiority) beyond a fierce and disorderly onslaught.

It may not be misplaced here to review some of the principal engagements fought between the Mexican Indians and their Spanish conquerors. For this purpose we select the campaign of Cor-

²⁰⁰ These canoes, "noalli," were constantly in motion within and around the pueblo. They kept up communication with the shores, and also served to carry the warriors, if necessary. We refrain from repeating here the many exaggerating reports about their numbers.

²⁰¹ Besides, constant watch was held by the priests on the summits of the temple pyramids. These were the real "guards" of the pueblo, in the daytime as well as at every hour of the night.

²⁰² Prescott ("History of the Conquest of Mexico," 1869. Vol. I, Book III, p. 445).

tés against Tlaxcallan, and the celebrated fight near Otumpan, both of which have been so beautifully described by Mr. Prescott. Although in the engagements against the Tlaxcallans the Mexicans proper were not concerned, we know that both tribes were so nearly alike in military resources and faculties, that we can easily substitute the one for the other, taking the action of the one as illustrative of the action of the other in a similar emergency. At Otumpan Mexicans and allied tribes opposed the Spaniards. Both examples will more particularly relate to *offensive* warfare, being combats in the open field.

Purposely we have used the term of "*campaign*" as connected with Tlaxcallan, avoiding the conception of "battles," or "great battles" even, so liberally employed by the majority of authors. It is erroneous to admit that *regular battles* were ever fought during the time Cortés advanced against the pueblo of Tlaxcallan. As far as we can rely upon the testimony of eye-witnesses, they merely prove that the Tlaxcallans allured, so to say, by the numerical inferiority of the Spanish invaders, pounced upon them with all the fury of a wild horde and, being saluted by a well nourished fire of murderous effect, they returned to their primitive warfare of decoys, ambushes, and surprises, hoping to tire out the Spaniards through this constant and desultory skirmishing. The tactics of Cortés, on this occasion, were simply to hold out in defensible positions; a task of no small difficulty if we consider that his men during many days could obtain no rest, and scarcely any food. But by persevering in this attitude he "turned the tables" upon the Indians of Tlaxcallan by finally tiring out, and wearing out, their power of *aggression*. Then *he* took the *offensive*, and by successful dashes, both revictualled his people and brought the enemy to favorable terms.²⁰³

²⁰³ The descriptions furnished by various authors of the 16th century, of this campaign against Tlaxcallan are most contradictory. Ixtlilxochitl says in his 13th Relation ("De la venida de los Españoles") that from Cempoalan to Tlaxcallan "the natives received them with the greatest joy, feasted them, and there were neither fights nor quarrels, beyond those which the Spaniards themselves provoked; if there were any at all." In the "*Histoire des Chichimèques*," however, the same author speaks of an action of two days, in which he estimates the numbers of the Tlaxcallans at 150,000 men (Cap. LXXXVIII, p. 189).—Tezozomoc (Cap. CX, p. 196) relates that the Otomies of Tecoco met together and spoke: "are we perhaps the vassals of those that have come? did they overcome us in just war? come on, Chichimecas, to arms against them!—and so, as like mountaineers, they forthwith armed themselves, and as they came shouting and hurling darts, the camp armed also, and gave them a discharge of small arms and fieldpieces, so that after an hour nothing more was left to do, the entire field being covered with dead bodies." This agrees almost verbally with Sahagun (Lib. XII, Cap. X, p. 422).

Of all the actions fought during the conquest none has taken so much the character of a regular battle as that of the 8th of July, 1520, and commonly named the battle of Otumpan. It was, however, but a "running fight," lasting a whole day or nearly. The Spaniards, without fire-arms, almost famished, reduced in numbers, and mostly all wounded, were pursued as soon as they left the pue-

Cortés ("Carta Segunda" Velia I. p. 16 and 17) gives a clearer description from which we glean the following facts: On entering the Tlaxcallan grounds, the van-guard of the Spaniards fell into an ambush, which they soon forced. "E desde sintieron que los nuestros se acercaban se retiraron, porque eran pocos, y nos dejaron el campo." He then moved on to a small stream, one league further, where he established his camp. The next day the Spaniards proceeded further, and were soon assaulted by a number of Indians. "Muy armados y con muy gran grita, y comenzaron a pelear con nosotros, tirándonos muchas varas y flechas." This attack was a feint, and drew the whites into an ambuscade ("hasta nos meter entre mas de cien mil hombres de pelea, que por todas partes nos tenian cercados, y peleamos con ellos, y ellos con nosotros, todo el dia, hasta una hora antes de puesto el sol, que se retrajeron."); *they continued advancing however all day*, and at night occupied the defensive position which Cortés thereafter held until the Tlaxcallans submitted. "Aquella noche me fice fuerte en una torricella de idolos que estaba en un cerito." On the following day Cortés made a successful *razzia* upon five or six small settlements, and on the next morning the Tlaxcallans in turn attempted to attack the Spanish camp. This attack was speedily repulsed, the Spaniards fortifying their position so, "que en obra de cuatro horas habíamos fecho lugar para que en nuestro real no nos ofendiesen, puesto que todavia hacian algunos arremetidas." In other words, the Tlaxcallans rushed up against the encampment, were beaten back, and then hovered around during the remainder of the day, skirmishing, and attempting to draw their foes into ambushes which they held prepared. From this time on the Indians never assaulted, but Cortés made occasional sallies and forays, revictualling his men, and burning the houses and crops of the natives, until the tribe made proposals of peace.

Andrés de Tápia, another eye witness, an officer of high rank. ("Relacion, Col: de Doc, II. pp. 567 and 568") fully confirms the statement of Cortés. The first day's engagement he describes as follows: "And about eight in the morning there sallied forth against us so many men of war, that it strikes me as if there had been one hundred thousand, while some are of opinion that there were many more. Some of them expected us in certain deep ravines of streams crossing our path, and, traversing them with much difficulty, we went in against them.... The Marquis always went in the lead with the horsemen, fighting, and returning from time to time to concert his men, keeping them close together.... Some Indians would close up with the horsemen so as to seize their lances, and thus while *fighting they proceeded that day* to a house of idols near which were two or three huts. There the Spaniards established themselves during eighteen days, and went out fighting as the Marquis commanded. . ."

According to the above two eye-witnesses, the "great battle" of the 2d Sept: 1519. (Prescott Vol. I. p. 427) appears on the part of the Indians, to have consisted of a wild rush or dash (perhaps a feint) speedily repulsed, an ambush, soon forced, and for the remainder of the day constant skirmishing and harassing of the Spanish march, until the latter reached a strong position. The "decisive victory" of the 5th Sept: 1519 (Prescott, Vol. I, pp. 437-447) was a fierce onslaught upon the Spanish camp at daybreak ("Otro dia en amaneciendo dan sobre nuestro real mas de ciento y cuarenta y nueve mil hombres," Cortés, p. 16) which met with a prompt repulse, and the remainder of the day was also filled with more or less heavy skirmishing on both sides. These are the two prominent days of fighting during the entire two weeks of hostilities against Tlaxcallan, and they certainly were not pitched battles, as commonly admitted. An atten-

blo of Zacamulco in the morning. Harrassed in flank and rear by the Mexicans who, not any longer checked by the volleys of musketry, dashed up to closer quarters, the Spaniards toiled on, fighting and marching, until, in the plains of Apan, they were completely surrounded on all sides. This was the *final ambush* prepared for them by the Mexicans. The engagement *there* must have been of the most desperate character, but it was of *short duration*, the Spaniards, with the courage of despair, cutting their way out. The Indians had so firmly relied upon annihilating their foes on that day that they desisted from future pursuit.³⁰⁴

The engagements near Otumpan were the last conflicts occurring after the terrible night of the 1st of July, 1520, and previous to the resumption of the campaign by Cortés, from his headquarters at Tlaxcallan. The numerous actions which took place after-

tive and critical reading even of the third eye-witness, the too much esteemed Bernal-Diez del Castillo ("Historia verdadera" in Vedia II, Caps. LXIII, LXIV, LXV, p. 55 to 58) confirms these views to the fullest possible extent, although the latter, bent upon recollecting personal incidents, and, from his subaltern position, less acquainted with general operations, enhances the importance of the action beyond the limits of truth.

It must not be inferred from the above that the achievements of the Spaniards are therefore less memorable. If the fighting was on a scale different from that of European wars, it was none the less exhausting. Any charge of a few horsemen could scatter the enemy, but the next moment a new attack, from some unexpected quarter might be looked for. The danger consisted less in injury on the battlefield, than in the gradual wearing out of the men by the never ceasing watchfulness required. The successful result reflects the highest credit upon the military capacity of the Spaniards, as well as upon their great commander.

³⁰⁴ Cortés ("Carta Segunda") pp. 45, 46. "And it appeared as if the Holy Ghost had enlightened me by this advice, after what occurred the next day. For, having moved on in the morning, at the distance of one and a half leagues large numbers of Indians came to meet us, so that in the van, rear and flanks the field seemed covered with them, and they assailed us with such violence, that we hardly knew each other, from being mixed up with them. . . . In this condition we remained much of the whole day, until it pleased God that one of their number was killed, who appeared to be of such quality, that with his death the fight ceased. Then we proceeded, somewhat relieved, but nevertheless exhausted, until to a small house in the plain, where we staid for the night."

The ambush had been prepared for several days (Bernal-Diez, Cap. CXXVIII, p. 136), for during their incessant pursuit on the preceding days the Mexicans had shouted to them: "Thither you shall go where none of you will escape alive" (p. 136). Sahagun (Lib. XII, Cap. XXVII, p. 434) says the Spaniards halted: "Los Españoles como les vieron ir tras sí con gran prisa entendieron que querían pelear y pararonse y pusieronse en órden de guerra; y los mexicanos como eran muchos tomaron en media à los Españoles y comenzaron à combatirlos de todas partes." See also Ixtlilxochitl ("Hist: des Chichimeques" Cap. LXXXIX). It was certainly a hand to hand conflict, the Indians, feeling sure to overpower their foes, striving to capture as many of them as possible alive. This, and the few horses remaining, saved the Spanish troop.

It is upon the statement of Bernal-Diez, that when the emblem or token carried by or near one of the principal chiefs fell, the fight ceased, that the conception has arisen, as if the fall of the chief banner decided the fate of an engagement. But there is no other evidence of the existence of a central banner or emblem.

wards are of minor interest to us up to the time when the siege of Mexico began. A rapid sketch of the events of this siege, however, should illustrate the *defensive* warfare of the Mexicans.

It is well known how, by a shrewd policy, as well as by able strategy, Cortés succeeded in *dismembering*, rather than overpowering, the Nahuatl confederacy of the valley of Mexico. He thus isolated the Mexican tribe proper, cut off its sources of reinforcement, and, above all, cut off its *subsistence*, by depriving it of tribute and barter. The time came at last when even those pueblos on the lake shores nearest to Mexico could not, or would not, any longer recognize friendly connections with their former military head. The surface of the water-sheet and the causeways were alone left to the tribe and to such additional warriors as had joined them in their abode, from the outside, to share their fate. As long as the lake could be freely navigated by Mexican canoes, any point of the mainland was exposed to attack by their warriors. Therefore Cortés launched his boats or "brigantines," which soon cleared Lake Tezcuco proper, driving the canoes to shelter in the narrow canals which ran all through the pueblo. His land forces occupied three out of the four issues of the causeways on the mainland. Then the Mexicans were effectually hemmed in, without any outlet beyond the limited circulation on the ponds lying west of the chief causeways. Cortés' first step was to seize Chapultepec, and to cut off the supply of fresh water running thence along the causeway to Mexico.²⁰⁵ Thus deprived of drinking water, almost, since that of the lagoon was not wholesome, with limited supplies of food only, the Mexican tribe was surrounded by human enemies *without*, whilst two of the greatest plagues of mankind, thirst and famine, were sure to threaten them, ultimately, *within*.

²⁰⁵ Mexico was provided with a constant supply of fresh water from Chapultepec. (Clavigero, Lib. VII, Cap. LIV.) The channels were constructed of stone, five feet high, and two feet broad (Cortés, "Carta Segunda"). It was one of the first moves of Cortés to seize the spring supplying these channels. The Mexicans, feeling the importance of the action, defended the position desperately. (Bernal-Diez. Cap. CL, p. 176.) "Acordamos que entrambas capitanias juntas fuésemos à quebrar el agua de chapultepeque de que se proveia la ciudad, que estaba desde allí de Tacuba aun no media legua. E yendo à los quebrar los caños, toparonnos muchos guerreros, que nos esperaban en el camino; porque bien entendido tenían que aquello había de ser el primero en que los podíamos dañar; y así como nos encontraron cerca de unos pasos malos, comenzaron à nos flechar y tirar vara y piedra con hondas, é nos hirieron à tres soldados; mas de presto les hicimos volver las espaldas, y nuestros amigos los de Tlascala les siguieron de manera, que mataron veinte y prendieron siete ò ocho dellos; y como aquellos grandes escuadrones estuvieron puestos en huida, les quebramos los caños por donde iba el agua à su ciudad, y desde entonces nunca se fué à Mejico entre tanto que duró la guerra." (Also Cortés. 1 Carta III, p. 71.)

Cortés might have quietly *waited* for these two terrible allies to do their work almost alone, had it not been for two reasons:

The principal reason was, that his position was not secure among the fickle Indian tribes, which the thirst for revenge, the lust of spoil, and dazzling success on his part had temporarily attached to his fate. A protracted siege lay beyond the military conceptions, nay, beyond the military *ability* of the Indians. They could not remain outside of their homes for such a length of time.²⁰⁶

On the other hand, the Mexicans, equally unprepared for a lengthy defence, compelled him to aggressive action.

Resorting to their only mode of warfare where a sudden dash with overwhelming numbers was not any longer possible,²⁰⁷ they made a number of feints, with the intention of drawing their enemies into an ambush. Moving against the Spaniards and their allies upon the causeways, they precipitately fled towards the first cut as soon as that onslaught was repulsed. When the pursuers arrived there, they would be charged in flank by heavy bodies of warriors, while in front it rained missiles of every kind upon them from behind the embankments erected on the inner side of the ditches.²⁰⁸ The Spaniards, however, knew too well how disastrous

²⁰⁶ Bernal-Díez (Cap. CLIII, p. 188, Veda II) "Dejemos de hablar de los grandes combates que nos daban, y digamos como nuestros amigos los de Tlascala y de cholula y Guaxocingo, y aun los de Tezcuco, acordaron de se ir à sus tierras." They were disheartened, says the old captain (p. 189), but there is no wonder, since the place had not been carried, Indian-fashion, at a rush, and thus they grew tired of waiting.

It is the most decisive testimony in favor of our views, heretofore already expressed, that the Mexican Indians were not able to carry on a protracted campaign, still less a siege of any duration.

²⁰⁷ During the siege, there is hardly any doubt but that the Indian allies of Cortés outnumbered the Mexicans. It would be, of course, unsafe to rely upon the numerical statements of the old authorities. They all vary. But if we only recollect that Tlaxcallan, Huexotzinco, Cholula, Chalco, Tezcuco, and some of the other main tribes joined the Spaniards, it necessarily convinces us that the numerical superiority was on the side of the besiegers. The great art of Cortés lay in consolidating the forces of these different tribes, which otherwise, in many cases, were enemies of long standing. With the Spaniards as *their leaders*, the fate of Mexico was sealed, provided they held out long enough. In all the engagements, the European soldiers formed but the nucleus around which their allies agglomerated. If they advanced, the others followed, occupying always so many of the Mexicans, and diverting them from falling too heavily upon the whites. In proportion, however, as the power of the Mexicans gave out, the deeds of the allies of Cortés grew more prominent, since there were more non-combatants to slaughter.

²⁰⁸ The bridges had all been removed, and entrenchments constructed *behind* them. Besides, pits had been dug, with earthworks on both sides, for the express purpose of arresting the cavalry. Long lances, armed with sword blades captured from the Spaniards during the "Noche triste," were used by the Mexicans to attack the horsemen. Against the brigantines, rows of pointed piles had been rammed in below the surface of

a retreat would prove under such circumstances, so, followed by their native allies, they persisted and overcame the obstacles by *storm*. The very Indian tactics intended for the destruction of the whites enabled the latter to gain a foothold on the causeways with less loss than a directly planned assault would have entailed.²⁰⁹

Until then, the Mexicans could make use of canoes, harassing both flank and rear of their enemies. But Cortés speedily widened the first cut in the causeway, and sent his scows with artillery to the west side.²¹⁰ Thence on, while the brigantines could not effect anything against the pueblo itself, they still kept at bay the canoes of the Mexicans, and moving up along the causeways with the land force, they successfully sustained, by a lively cannonade, the efforts of the latter against the defences at the cuts and ditches.²¹¹

the water. Bernal-Diez (Cap. CL, pp. 176, 177) relates that, after the corps of Alvarado had occupied Tacuba, the Mexicans began to shout to them vociferously from the causeways and the water (then yet free to them). "Y aquellas palabras que nos decían eran "con pensamientos de nos indignar para que saliésemos aquella noche à guerrear, y herirnos mas á su salvo." Further on he says: "Y como aquello hubimos hecho, acordaron "nuestros capitanes que luego fuésemos á dar una vista y entrar por la calzada de Tacuba y hacer lo que pudiésemos para les ganar una puente; y llegados que fuimos á la "calzada, eran tantas las canoas que en la laguna estaban llenas de guerreros y en las "mismas canoas y calzadas, que nos admirábamos dello; y tiraron tanta de vara y "flecha y piedra con hondas, que en la primera refriega hirieron treinta de nuestros "soldados é murieron tres; y aunque nos hacían tanto daño, todavía les fuimos entrando "por la calzada adelante hasta una puente, y à lo que yo entendí, ellos nos daban lugar "à ello, por meternos de la parte de la puente; y como allí nos tuvieron, digo que cargaron tanta multitud de guerreros sobre nosotros que no nos podíamos valer." The Mexicans always provoked the Spanish attack, until the brigantines were masters of the ponds lying to the west of Mexico, also. (See also Cortés, "Carta tercera," Vedia I, p. 71.)

²⁰⁹ The first attack of Alvarado was repulsed. But subsequently they captured "many works and bridges." The fighting was very obstinate, the Mexicans charging at every hour of the day and night. See Prescott (Vol. III, Book VI, Cap. p. 106 and 107). "During the first five or six days after their encampment, the Spaniards experienced much annoyance from the enemy, who too late endeavored to prevent their taking up a position so near the capital, and which, had they known much of the science of war, they would have taken better care themselves to secure. Contrary to their usual practice the Indians made their attacks by night as well as by day. The water swarmed with canoes, which hovered at a distance in terror of the brigantines, but still approached near enough, especially under cover of the darkness, to send showers of arrows into the Christian camp."

²¹⁰ The brigantines were flat-bottomed scows, manned with small guns. Even on the water, the Mexicans resorted to ambushes. The vicinity of the pueblo was surrounded by rows of pointed piles, below the surface of the lake, and squadrons of canoes were sent to decoy the brigantines into such treacherous places. On one occasion they succeeded in capturing one of the vessels in this manner. (Prescott, Vol. III, p. 28, quoting from Bernal-Diez.)

²¹¹ The points occupied by the three Spanish divisions were: Tepeyacac (Guadalupe Hidalgo), at the north, Tacuba at the west, and Cuyuacan to the southwest. It was originally intended to occupy Iztapalapan, but the position could not be carried, and

In this manner the favorite Mexican tactics of decoy and ambush were gradually overcome step by step, with little loss of life. Their treacherous sallies were not only not dreaded, they were even *desired*, since each of them procured a new basis to the assailants, who thus eventually reached, from three sides, the entrance to the pueblo. This pueblo lay before them seemingly open and unfortified. It was not a connected town, but a group of minor clusters, interspersed with gardens, through which water courses filtered in all directions. From large squares, massive truncated pyramids arose, crowned with houses of worship. A few wide thoroughfares led up to the main teo-calli, which the Spaniards regarded as the centre of the settlement. The Mexicans had again cut these thoroughfares, erecting bulwarks of stone and earth behind them. These defences could be carried by storm, and the heart of the pueblo reached. But once there, and far enough from their basis, the victorious Spaniards saw the flat housetops suddenly swarm with Indians, which showered all kinds of missiles upon them. Into their rear large bodies of warriors poured by alleys and cross-streets, occupying the very trenches they had just passed. Nothing remained for the assailants but to retreat upon the causeways; a movement not always easy, and certainly attended with loss. In order to avoid such dangerous ambushes, in which the temples served as decoys, and each communal dwelling as a hiding place for the enemy, Cortés was compelled to advance slowly and cautiously. No trench was left in the rear without being properly filled up, and in the end, seeing that the entire pueblo was but a complicated trap where every house was an eventual stronghold, he resorted much against his will, to the desperate expedient of levelling to the ground all constructions which might afford lurking places to the Mexicans.

Thus, step by step, the tribe of Mexico was driven into a narrower space. A constantly widening girdle of smouldering ruins closed upon them from all sides, and if, with the energy of despair, they dashed time and again upon this ghastly belt, they met at its inner limits their wary foes, which hurled them back, im-

thus Sandoval, who commanded, marched his corps to the north side. The division advancing from Cuyuanac soon seized Xoloc, where the dykes met, and cut off all communication with the south. The brigantines, after clearing the lake, and dislodging the Mexicans from some eminences arising above the water, where small "teo-calli" had been erected, kept up communication between the three divisions, and assisted them in their efforts against the trenches of the causeways.

proving the opportunity to advance further towards them. Meanwhile, hunger was looming up in their midst, engendering pestilence. Their bodies were weakening day by day, there were no means of subsistence left, the women and children wandered about like living corpses, without fear of Cortés' ruthless Indian allies. Still the tribe did not submit, and when, twice, the war-chiefs represented the futility of future defence, the "chief council," as supreme authority, sternly declared: "that it was better to die fighting, than to remain in the power of those who would enslave and torture them."²¹² At last, on the 13th of August, 1521, Cortés, advancing "across the black and blasted environs which lay around the Indian capital," ordered a final onslaught upon the miserable remnants of the Mexicans: "huddled together in the utmost confusion, all ages and sexes, in masses so dense that they nearly forced one another over the brink of the causeways into the water below. Some had climbed on the terraces, others feebly supported themselves against the walls of the buildings. Their squalid and tattered garments gave a wildness to their appearance, which still further heightened the ferocity of their expression, as they glared on their foes with eyes in which hate was mingled with despair."²¹³ Exposed to a destructive fire from all sides, the half famished crowd attempted a feeble resistance, then scattered, preferring flight to surrender. But they were speedily overtaken and the principal chiefs captured, thus leaving Mexico definitively in the hands of the Spaniards.

We have purposely dwelt at some length on the events of the siege of the pueblo of Mexico. It is because they illustrate, better than any other page of their history, Indian *defensive* warfare, carried to its highest point of development. The Mexicans, during this memorable defence, achieved the most that any Indian tribe could achieve, up to the Sixteenth Century. Their resistance, in that respect, stands *unparalleled*. Besides, its very tenacity, the fortitude with which they bore, without yielding, the greatest sufferings, are a further evidence that what they did, was not out of fear of a crushing despotism ruling them with an

²¹² Bernal-Díez (Vedía II, cap. CLIV, p. 191, and CLV, p. 194). The Council opposed the advice of Quauhtemotzín, who was for surrender:—"poniéndole por delante el fin de su tío el gran montezuma," p. 194.

²¹³ W. H. Prescott (Book VI, cap VIII, p. 200 and 201).

iron hand, but by *free common consent*. It is an additional proof of the facts we have advanced: that the Mexicans were not subject to a despotical power, but organized after the principles of a barbarous, but free *military democracy*.

REPORT PRABODY MUSEUM, II. 11.

REPORT OF THE TREASURER.

*To the Trustees of the Peabody Museum of American Archaeology and
Ethnology in connection with Harvard University:*

The Treasurer respectfully presents his Tenth Annual Report in the following abstract of accounts, and the cash account hereto annexed:—

The Collection Account is charged with

9 Massachusetts 5 per cent. Coast Defence Specie Notes, due July 1, 1883, each for \$5,000, numbered 48 to 54, registered, the gift of George Peabody, Esq.		\$45,000 00
Income from above Notes in currency	\$3,454 61	
Income from 9 Massachusetts Coast Defence Notes of Professor Fund	2,454 61	
Income from Treasurer's Investments	650 92	
		5,560 14
Balance of last Annual Account		384 56
Note of Worcester & Nashua R. R. Co., July 5, 1876, 6 per ct.	8,465 28	
Balance of Note of Worcester & Nashua R. R. Co., July 9, 1876, 6 per cent.	1,300 00	
Note of Worcester Gas Light Co., Jan. 4, 1876, 6 per cent.	1,300 00	
Note of Worcester Gas Light Co., Jan. 15, 1876, 6 per cent.	600 00	
		11,665 28
		<u>\$62,610 00</u>

And Collection Account is credited with

9 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000		\$45,000 00
Balance of Worcester & Nashua R. R. Co. Note, July 5, 1876, 6 per cent.	\$7,965 28	
Note of Worcester & Nashua R. R. Co. July 5, 1876, 6 per cent.	1,691 89	
Note of Worcester Gas Light Co., Jan. 4, 1876, 6 per cent.	1,300 00	
Note of Worcester Gas Light Co., Jan. 15, 1876, 6 per cent.	600 00	
		11,557 17
Payment for Explorations and Collections	1,540 38	
Payment to Dr. Edward Palmer, on account of Explorations	100 00	
		1,640 38
Payment of rent to Harvard College	750 00	
Payment of rent of Safe Deposit	30 00	
Payment of Salary to F. W. Putnam, Curator	1,000 00	
Payment to F. W. Putnam, Curator, for Books	130 55	
Payment to F. W. Putnam, Curator, for Incidental Expenses	883 58	
Payment for printing Report and other printing	338 94	
		2,633 07
Balance in hands of Treasurer		1,789 38
		<u>\$62,610 00</u>

The Professor Fund consists of

9 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbers 55 to 63, registered, the gift of George Peabody, Esq.; the income appropriated to Collection Fund, until the Professorship is filled	\$45,000 00
---	-------------

The Building Account is charged with

13 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 64 to 75 registered, the gift of George Peabody, Esq.	\$60,000 00
9 Worcester Water Bonds, due June 1, 1877, 6 per cent.	\$4,500 00
3 Worcester Sewer Bonds, due June 15, 1877, 6 per cent.	3,100 00
7 Worcester & Nashua R. R. Co. Bonds, April 1, 1873, 7 per cent.	11,000 00
40 Shares Philadelphia, Wilmington, etc. R. R. Co.	3,198 63
40 Shares State N. Bank	5,040 00
5 Bonds Boston B. & Gardner R. R. Corpor., \$5,000, 7 per cent.	4,675 00
Note of Worcester & Nashua R. R. Co., July 5, 1875, 6 per cent.	5,175 11
Note of Worcester & Nashua R. R. Co., Oct. 16, 1875, 6 per cent.	743 45
Note of Worcester & Nashua R. R. Co., July 1, 1876, 6 per cent.	6,210 00
Note of Worcester Gas Light Co., Jan. 4, 1876, 6 per cent.	3,200 00
Income from Massachusetts 5 per cent. Specie Notes, currency	3,373 81
Income from Investments of Treasurer	3,690 69
	<u>50,008 69</u>
	<u>\$110,008 69</u>

Building Account is credited with

13 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 64 to 75, registered	\$60,000 00
7 Bonds of Worcester & Nashua R. R. Co., 7 per cent., dated April 1, 1873,	\$11,000 00
40 Shares of State N. Bank	5,040 00
5 Bonds of Boston, B. & Gardner R. R. Corp., \$5,000, 7 per cent.	4,675 00
Payment on account of Peabody Museum Building	20,715 00
Payment to Treasurer, balance of last account	33,900 00
Balance now in hands of Treasurer	71 09
	<u>893 60</u>
	<u>\$110,008 69</u>

The Investments of the

Collection Fund, at cost, amount to	\$56,246 55
Professor Fund, at par, amount to	45,000 00
Building Fund, at cost, amount to	81,037 60
	<u>\$184,384 15</u>

STEPHEN SALISBURY, *Treasurer.*

Jan. 17, 1877.

Dr.

STEPHEN SALISBURY, *Treasurer of the Peabody Museum of American Archaeology and*

1876.		<i>For Collection Fund.</i>	
Jan.	19.	To balance of account	\$384 58
Feb.	7.	To rec'd in part of Worcester & Nashua R. R. Co. Note of July 9, 1875	1,000 00
Mch.	23.	To rec'd balance of Worcester & Nashua R. R. Co. Note of July 9, 1875	\$300 00
Mch.	23.	To rec'd Interest on above note	10 07
Apr.	8.	To rec'd in part of Worcester & Nashua R. R. Co. Note of July 5, 1875	310 07
Apr.	25.	To rec'd in part of Worcester & Nashua R. R. Co. Note of July 5, 1875	150 00
July	1.	To rec'd Interest to date on Worcester Gas Light Co. Note of Jan. 4, 1876	350 00
July	1.	To rec'd Interest to date on Worcester Gas Light Co. Note of Jan. 15, 1876	38 35
July	5.	To rec'd Interest to date on Worcester & Nashua R. R. Co. Note of July 5, 1875	16 80
July	6.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes to 1st inst., Gold	54 25
July	6.	To rec'd on sale of above \$1,125, Gold, at 12 per cent.	247 65
July	6.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes of Professor Fund to 1st inst., Gold	1,125 00
July	6.	To rec'd on sale of above \$1,125, Gold, at 12 per cent.	135 00
Oct.	4.	To rec'd of Lucien Carr, settlement of advance, June 27	1,125 00
1877.			2,520 00
Jan.	1.	To 6 months' Interest on Note of Worcester Gas Light Co. for \$1,300	100 00
Jan.	1.	To 6 months' Interest on Note of Worcester Gas Light Co. for \$600	39 00
Jan.	8.	To 6 months' Interest on Mass. 5 per cent. Specie Notes to 1st	18 00
Jan.	8.	To rec'd on sale of above \$1,125, Gold, at 6 3-16	57 00
Jan.	8.	To rec'd 6 months' Interest on Mass. 5 Specie Notes Professor Fund	1,125 00
Jan.	8.	To rec'd on sale of above \$1,125, Gold, at 6 3-16	69 61
Jan.	8.	To rec'd Interest to 5th on Worcester & Nashua R. R. Co. Note of July 5, 1876, 5 per cent.	1,125 00
Jan.	8.	To rec'd Interest to 5th on balance of Worcester & Nashua R. R. Co. Note of July 5, 1876	69 61
			2,389 23
			42 29
			238 96
			281 25

\$7,844 72

Cr.

Ethnology in connection with Harvard University, in Annual Cash Account, Jan. 17, 1877.

1876.			
Jan.	23.	By paid Prof. S. F. Baird for Explorations	\$250 00
Jan.	23.	By paid Prof. E. B. Andrews on acc't of Explorations in Ohio	100 00
Feb.	3.	By paid rent of Safe Deposit to 1st	80 00
Feb.	7.	By paid Harvard College one year's rent of Hall to 1st inst.	750 00
Feb.	17.	By paid Prof. S. F. Baird for Gold Images from Bo- gota	125 00
Feb.	18.	By paid F. W. Putnam, Curator, for paid for Books	\$80 75
Feb.	18.	By paid F. W. Putnam, Curator, Incidental expenses	38 46
Mar.	22.	By paid Dr. Edward Palmer for Explorations in Arizona	100 00
Mar.	22.	By paid for 2 Postal Orders to remit the above . . .	50
Apr.	5.	By paid F. W. Putnam, Curator, Salary to 1st	250 00
Apr.	5.	By paid F. W. Putnam, Curator, Incidental expenses	89 57
Apr.	5.	By paid F. W. Putnam, Curator, for Indian Jar and Stone Implements	30 00
Apr.	18.	By paid J. P. Weld, bill of Curtains in 1873	24 00
Apr.	18.	By paid F. W. Putnam for paid for Arrowheads from Cumb. Co., Tenn.	25 00
Apr.	24.	By paid estate of Prof. Jeffries Wyman for Explora- tions, etc.	49 00
May	11.	By paid F. W. Putnam, Curator, for paid for Books	300 00
June	3.	By paid Dr. C. C. Abbott for Explorations in New Jersey	20 68
June	3.	By paid A. Story for Photographs of Peruvian Col- lection, on account	50 00
June	12.	By paid for publishing Annual Report	50 00
June	12.	By paid for printing plates of Geo. Peabody, \$15.00; J. Wyman, \$47.00	266 94
June	27.	By paid Lucien Carr for Explorations in Kentucky, on account	62 00
July	5.	By paid for Worcester & Nashua R. R. Co. Note on demand. Interest 6 per cent.	328 94
July	6.	By paid F. W. Putnam, Curator, 3 months' Salary to 1st inst.	100 00
July	6.	By paid F. W. Putnam, Curator, for Incidentals . . .	1,691 89
July	6.	By paid Prof. S. F. Baird for paid for Freight . . .	250 00
Aug.	14.	By paid F. A. Stratton for Stone Objects from Tenn.	153 07
Aug.	14.	By paid Mr. Jenks for Stone Objects from N. Carolina	403 07
Oct.	4.	By paid F. W. Putnam, Curator, 3 months' Salary to 1st inst.	179 02
Oct.	4.	By paid F. W. Putnam, Curator, for Books, \$20.12; Incidentals, \$22.56	50 00
Nov.	2.	By paid Dr. Edward Palmer for Indian collection . .	50 00
Nov.	2.	By paid Henry Gillman for collection at L. Superior	23 25
Nov.	5.	By paid Lucien Carr for Excavating Mound in Ken- tucky, \$39.00; for Pipes, \$13.00	73 25
Nov.	16.	By paid F. W. Putnam, Curator, Freight on Casts of Crania from Leghorn	52 00
Dec.	18.	By paid Dr. Edward Palmer, advanced for Explora- tions	73 61
Dec.	18.	By paid Dr. Edward Palmer, advanced for Explora- tions	100 00
1877.			
Jan.	5.	By paid F. W. Putnam, Curator, 3 months' Salary to 1st inst.	250 00
Jan.	5.	By paid F. W. Putnam, Curator, for paid for Explora- tions and Collections	22 00
Jan.	5.	By paid F. W. Putnam, Curator, for Incidentals . . .	55 90
Jan.	17.	By balance carried to New Account	327 90
			1,789 38
			<u>\$7,844 72</u>

Dr.

For Building Fund.

1876.				
April	1.	To rec'd 6 months' Interest on Worcester & Nashua R. R. Bonds	\$385 00	
April	1.	To rec'd 6 months' Interest on Boston B. & Gardner R. R. Bonds	175 00	\$560 00
				105 00
April	13.	To rec'd Dividend State N. Bank, 2½ per cent . . .		
June	23.	To rec'd Interest for 6 months on Worcester Water Bonds to 1st	135 00	
June	23.	To Rec'd Interest for 6 months on Worcester Sewer Bonds to 15th	63 00	198 00
July	1.	To rec'd Interest to date on Worcester Gas Light Co. Note		64 90
July	5.	To rec'd 6 months' Interest on Worcester & Nashua R. R. Note of July 5, 1875	155 25	
July	5.	To rec'd 6 months' Interest on Worcester & Nashua R. R. note of Jan. 1, 1876	190 40	
July	5.	To rec'd for Worcester & Nashua R. R. Note Oct. 16, 1875, \$743.45, Interest \$22.30	785 75	
July	5.	To rec'd for Worcester & Nashua R. R. Note, Apr. 1, 1876, \$593.91, Interest 9.30	603 21	1,714 61
July	6.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes, Gold	1,500 00	
July	6.	To rec'd on sale of above \$1,500 Gold at 12 per cent.	180 00	1,680 00
July	6.	To rec'd of Philadelphia & Wilmington R. R. Co. Stock Dividend 4 per cent.		80 00
Oct.	2.	To rec'd 6 months' Interest on Worcester & Nashua R. R. Bonds to 1st	285 00	
Oct.	2.	To rec'd 6 months' Interest on Boston, B. & Gardner R. R. Bonds to 1st	175 00	560 00
				105 00
Oct.	6.	To rec'd of State N. Bank, Dividend 2½ per cent. . .		
Oct.	21.	To rec'd for Worcester & Nashua R. R. Co. Note, July 5, 1875, \$5,175.11, Interest \$91.40	5,266 51	
Oct.	21.	To rec'd for Worcester & Nashua R. R. Co. Note, Jan. 1, 1876, \$6,310, Interest \$109.71	6,319 71	
Oct.	21.	To rec'd for Worcester & Nashua R. R. Co. Note, July 5, 1875, \$1,714.61, Interest 5 per cent., \$25.23	1,739 84	
Oct.	21.	To rec'd for Worcester Gas Light Co. Note, Jan. 4, 1876, \$2,300, Interest \$40.53	2,340 33	15,366 39
Dec.	11.	To rec'd 6 months' Interest on Worcester Water Bonds to 1st	135 00	
Dec.	15.	To rec'd 6 months' Interest on Worcester Sewer Bonds to 15th	63 00	198 00
Dec.	11.	To rec'd for 40 Shares Philadelphia & Wilmington R. R. Bonds at \$63, deducting brokerage \$5		2,515 00
Dec.	26.	To rec'd for Worcester Water Bonds, due June 1, 1877, \$4,500.00, and Interest \$135 = \$4,635, 5 mo., 5 days discount, 4½ per cent., \$69.81	4,545 19	
Dec.	26.	To rec'd for Worcester Sewer Bonds due June 15, 1877, \$2,100, Interest \$63 = 2,163, 5 mo., 19 days discount, 4½ per cent., \$45.69	2,117 81	6,668 30
1877.				
Jan.	8.	To rec'd 6 months' Interest to 1st on Mass. 5 per cent. Specie Notes	1,500 00	
Jan.	8.	To rec'd on sale of above \$1,500 Gold at 65-16 per cent.	92 81	1,592 81
				<u>\$31,669 31</u>

		Cr.
1876.		
Jan. 19.	By Balance of Account	\$71 00
April 1.	By paid for Worcester & Nashua R. R. Co. Note on demand, 6 per cent.	508 91
		<u>508 91</u>
July 5.	By paid for Worcester & Nashua R. R. Co. Note on demand, 6 per cent.	\$685 00
		1,714 61
July 20.	By paid Robert H. Slack, Architect, on account . .	600 00
Oct. 4.	By paid Robert H. Slack, Architect, on account . .	500 00
Oct. 12.	By paid Hancock & Greely on account of carpentry of Museum	2,850 00
Oct. 23.	By paid W. C. Poland & Son on account of mason work of Museum	12,750 00
Oct. 23.	By paid G. W. & F. Smith, on account of iron work of Museum	1,500 00
		<u>14,250 00</u>
Dec. 20.	By paid Robert H. Slack, Architect, on account . .	500 00
1877.		
Jan. 2.	By paid W. C. Poland & Son on account of masonry of Museum	7,700 00
Jan. 3.	By paid Hancock & Greely on account of carpentry of Museum	2,500 00
		<u>10,200 00</u>
Jan. 17.	By Balance to New Account	323 60
		<u>\$51,008 21</u>

\$51,008 21

I certify that I have examined this account, and find the items to correspond with the vouchers, and to be correctly computed, and that the securities are in the Treasurer's possession.

S. F. HAVEN, Auditor.

Jan. 15, 1877.



ELEVENTH ANNUAL REPORT
OF THE TRUSTÉES
OF THE
PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY,

PRESENTED TO THE PRESIDENT AND FELLOWS OF
HARVARD COLLEGE, SEPTEMBER, 1878.

Vol. II. No. 2.

CAMBRIDGE:
PRINTED BY ORDER OF THE TRUSTEES.
1878.

**PRINTED AT THE SALEM PRESS,
SALEM MASS.**

CONTENTS.

	PAGE.
LIST OF TRUSTEES AND OFFICERS	173
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	175
ABSTRACT FROM THE RECORDS	176
REMARKS OF HON. ROBERT C. WINTHROP AT THE ANNUAL MEET- ING, FEBRUARY 18, 1878	177
REPORT OF THE BUILDING COMMITTEE	185
REPORT OF THE CURATOR	191
ADDITIONS TO THE MUSEUM AND LIBRARY DURING THE YEAR . .	207
MEASUREMENTS OF CRANIA RECEIVED DURING THE YEAR . . .	221
SECOND REPORT ON THE IMPLEMENTS FOUND IN THE GLACIAL DRIFT OF NEW JERSEY, BY C. C. ABBOTT	225
THE METHOD OF MANUFACTURE OF SEVERAL ARTICLES BY THE FORMER INDIANS OF SOUTHERN CALIFORNIA, BY PAUL SCHUMACHER	258
CAVE DWELLINGS IN UTAH, BY EDWARD PALMER	268
THE MANUFACTURE OF SOAPSTONE POTS BY THE INDIANS OF NEW ENGLAND, BY F. W. PUTNAM	273
NOTES ON A COLLECTION FROM AN ANCIENT CEMETERY IN SOUTHERN PERU, BY JOHN H. BLAKE	277
ARCHÆOLOGICAL EXPLORATIONS IN TENNESSEE, BY F. W. PUTNAM	305
OBSERVATIONS ON THE CRANIA FROM THE STONE GRAVES IN TENNESSEE, BY LUCIEN CARR	361
ON THE TENURE OF LAND AMONG THE ANCIENT MEXICANS, BY AD. F. BANDELIER	385
REPORT OF THE TREASURER	449



PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY
IN CONNECTION WITH
HARVARD UNIVERSITY.

FOUNDED BY GEORGE PEABODY, OCTOBER 8, 1866.

TRUSTEES.

ROBERT C. WINTHROP, Boston, 1866.

CHARLES FRANCIS ADAMS, Quincy, 1866.

FRANCIS PEABODY, Salem, 1866; *deceased*, 1867.

STEPHEN SALISBURY, Worcester, 1866.

ASA GRAY, Cambridge, 1866.

JEFFRIES WYMAN, CAMBRIDGE, 1866; *deceased*, 1874.

GEORGE PEABODY RUSSELL, Salem, 1866; *resigned*, 1876.

HENRY WHEATLAND, Salem, 1867. Successor to Francis Peabody, as
President of the Essex Institute.

THOMAS T. BOUVÉ, Boston, 1874. Successor to Jeffries Wyman, as
President of the Boston Society of Natural History.

THEODORE LYMAN, Brookline, 1876. Successor to George Peabody Rus-
sell, by election.

OFFICERS.

ROBERT C. WINTHROP, *Chairman*, 1866.

STEPHEN SALISBURY, *Treasurer*, 1866.

GEORGE PEABODY RUSSELL, *Secretary*, 1866-1873.

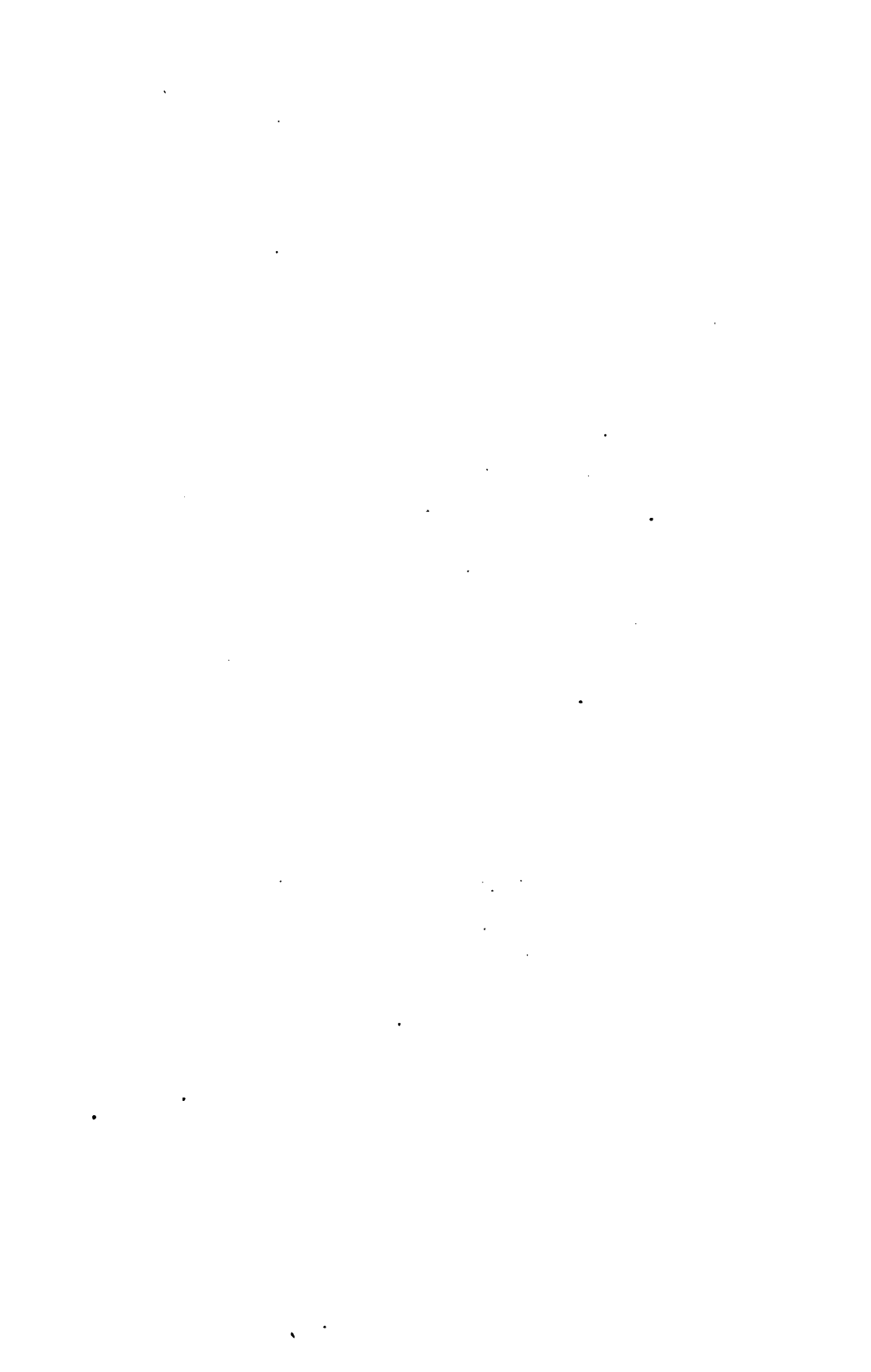
HENRY WHEATLAND, *Secretary*, 1873.

JEFFRIES WYMAN, *Curator of the Museum*, 1866-74.

ASA GRAY, *Curator of the Museum. pro tempore*, 1874-1875.

FREDERICK W. PUTNAM, *Curator of the Museum*, 1875.

LUCIEN CARR, *Assistant Curator of the Museum*, 1877.



ELEVENTH ANNUAL REPORT.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

THE Trustees of the Peabody Museum of American Archaeology and Ethnology herewith respectfully communicate to the President and Fellows of Harvard College, as their Eleventh Annual Report, the Reports of their Curator and Treasurer for the year ending in February last.

ROBERT C. WINTHROP,
CHARLES FRANCIS ADAMS,
STEPHEN SALISBURY,
ASA GRAY,
HENRY WHEATLAND,
THOMAS T. BOUVÉ,
THEODORE LYMAN.

CAMBRIDGE,
SEPTEMBER 9, 1878.

ABSTRACT FROM THE RECORDS.

MONDAY, FEBRUARY 18, 1878. The Annual Meeting was held this day at noon in the Museum Building, Cambridge. Present: Messrs. WINTHROP, SALISBURY, ADAMS, GRAY, LYMAN and WHEATLAND; also the Curator, Mr. F. W. PUTNAM.

Records of the last annual meeting and of the meetings held on Wednesday, April 11, Monday, July 23, and Monday, November 19, were read and approved.

The Chairman, Hon. ROBERT C. WINTHROP, made a Communication containing many interesting facts respecting the conception and history of the Museum.

Report of the TREASURER was read, accepted and ordered to be printed.

Report of the CURATOR, with accompanying documents, was read, accepted, and ordered to be printed.

Hon. STEPHEN SALISBURY resigned the office of Treasurer, which he has held since the organization of the Board, to take effect when a successor shall be chosen and qualified, or satisfactory arrangements made for the care and management of the funds.

The subject was referred to Messrs. LYMAN and SALISBURY to report thereupon at an adjournment of this meeting.

In answer to a question of Prof. GRAY, the Curator stated that very satisfactory returns had been made to the Museum by the Smithsonian Institution for the share taken by the Museum in the explorations conducted jointly by the two Institutions.

The BUILDING COMMITTEE were requested to prepare a description of the Museum Building for publication in the Annual Report.

The appropriations, recommended by the Curator for the year ensuing, were acted upon and adopted.

Voted, To adjourn to meet in the rooms of the Massachusetts Historical Society on the second Thursday in March, (March 14), at 1 P. M.

HENRY WHEATLAND, *Secretary*.

INTRODUCTORY REMARKS
OF
HON. ROBERT C. WINTHROP,
CHAIRMAN OF THE BOARD OF TRUSTEES.

OUR Annual Meeting, Gentlemen, has been postponed for several weeks in order to allow our Curator more leisure for preparing these apartments for our reception. We meet now, for the first time, in our permanent home, over the entrance to which—carved legibly on the free-stone block above the door—is the Inscription:—"Peabody Museum of American Archæology and Ethnology." We meet, too, by a somewhat fortuitous, but certainly a most auspicious, coincidence of dates, on the birthday of our illustrious founder. Mr. Peabody was born at South Danvers, in this State, on the 18th of February, 1795, and would have been entering to-day, had he lived, on his 83d year.

I am unwilling that our meeting on this Anniversary, and in this new Hall, should pass off without a few informal words, on my part, as the permanent Chairman of the Board, which seem to be due to the memory of Mr. Peabody, if not due to myself, and which belong indeed to the history of this Institution. If our Museum shall fulfil its promise, and shall become, as I think it rapidly is becoming, one of the most interesting and important Scientific Departments of the University, a day may arrive, in some far distant future, when it shall itself be the subject of archæological research, and when its small beginnings may furnish matter for careful investigation. Let me recall, then, some dates and facts which are probably within my own knowledge only, and which may at least serve to help some future inquirer.

It was on the 1st of June, 1866, as I find by my notes at the time, that I first met Mr. Peabody, at his own request, at the Tremont House in Boston, to consult with him on his proposed endowment for Harvard University. On the 4th of June, three days afterwards, Professor O. C. Marsh, of Yale College, and Mr. George Peabody Russell, both of them nephews of our Founder, called on me at the rooms of the Massachusetts Historical Society, for further consultation on the subject. On the 17th of June following, Mr. Peabody spent an hour with me at Brookline, solely in reference to this plan for Harvard. At this interview he placed in my hands a rough sketch of our Institution, and gave me permission to consult confidentially with one or two of the friends of the University in regard to it.

For this consultation I selected, before all others, the late President Walker, and I am not sure that I sought serious counsel of any one else. Dr. Walker took the matter into consideration in his calm, wise, common-sense way, and was ready, after a few days, to pronounce a deliberate judgment. He saw, as I did, that in confining his liberality to this one scientific object, Mr. Peabody would disappoint not a few hopes and expectations at Cambridge. There were peculiar needs there at that time. The Library was greatly in need. The Museum of Comparative Zoology was not less in need. The general finances of the University were sadly deficient. Meantime, the idea of such an Institution as this had never occurred to any one, and pre-historic science was too much in its infancy to have enlisted any ardent votaries.

But Dr. Walker soon reached a conclusion, in his own mind, on these and all other points of doubt. I remember how emphatically he said to me, substantially, as the result of his deliberations:—“Mr. Winthrop, I have always been of opinion that when a generous man, like Mr. Peabody, proposes a great gift, we should accept it on his own terms, and not on ours. Even if we could persuade him to change his plans, and endow some other branch of the University, he would never take the same interest in it, or re-

gard it so much as his own. We had better take what he offers, and take it on his own terms, and for the object which he evidently has at heart. That object may not impress the College or the community, at first sight, as one of the highest interest or importance. There may be, and will be, as you say, disappointments in some quarters. But the branch of Science, to which this endowment is devoted, is one to which many minds in Europe are now eagerly turning, and with which not a few of the philosophical inquiries and theories of the hour are intimately associated. It will grow in interest from year to year. This Museum, too, will be the first of its kind in our country, and will have the best chance of securing those relics of our Indian tribes, which are now scattered in so many private collections. It is, moreover, precisely one of those institutions which must necessarily owe its foundation to private liberality. We could never hope to make it the subject of a public subscription or contribution. But if Mr. Peabody will make it his own, and endow it handsomely, and if we can get a safe, sound, accomplished person, like Jeffries Wyman, to take the charge of it, there can be no doubt of its ultimate success."

Dr. Walker, as you all know, was not a man of many words, and I may have amplified in some degree the views he expressed in our repeated comparisons of opinion. But such were his conclusions, and I should be wanting to his memory, if I did not place him foremost among those whose advice and counsel led to the unqualified acceptance of Mr. Peabody's offer, and to the establishment of this Museum.

On the 6th of July, I was able to communicate to Mr. Peabody, by letter, the result of our consultations. But it was not until the 24th of September that his plan was sufficiently matured to be communicated to others. On that day he met me again, at the Historical Rooms, together with his nephews, Prof. Marsh and Mr. Russell, and after arranging the details of our organization, I was authorized to call a meeting of the gentlemen designated as Trustees. On the 28th of September, a primary and provisional meet-

ing was, accordingly, held, — the late Francis Peabody, of Salem, Prof. Asa Gray, Prof. Jeffries Wyman, Hon. Stephen Salisbury, and Mr. George Peabody Russell being in attendance, and making, with myself, all the Trustees, except Mr. Adams who was still in London.

On the 18th of October, Mr. Peabody signed the Instrument of Trust, which was published in the Boston Daily Advertiser of the next morning, and on the 3d of November, 1866, the first formal meeting of the Trustees was held. The Board was organized on that day, agreeably to the terms of the Instrument; and I then proceeded, with Mr. Salisbury and Mr. Francis Peabody to the office of Blake Brothers & Co., in State Street, where we received the Massachusetts Bonds for \$150,000, counted them and sealed them up, and then deposited them temporarily in the safe of the Massachusetts Hospital Life Insurance Company. From that time to this our proceedings have been a matter of record.

I have referred to the early and emphatic suggestion by Dr. Walker, of JEFFRIES WYMAN, as the man of all others for the Curator of our Museum; and I find that on the 1st of December, following our organization, Dr. Walker spent an hour with me in my library in earnest enforcement of this suggestion. It needed no enforcement, so far as I was personally concerned, and it soon proved that our whole Board was of one mind on that point. The Curatorship was unanimously assigned to Professor Wyman, who was also one of our Trustees, and he continued to discharge the duties of that office for the eight remaining years of his life.

His death, on the 4th of September, 1874, occurred while I was in Europe, and I cannot forget the deep sorrow with which I saw its announcement, accidentally, in a copy of Galignani's Messenger, while I was passing a few days in Heidelberg. As my absence from home deprived me of the opportunity of uniting with the Trustees in paying him the just tribute which is upon our records, I may be pardoned for dwelling, for a moment longer, upon his signal and preëminent services to this Institution. My relations to

him, as Chairman of the Board, brought me into very frequent consultation and correspondence with him in regard to the Museum. As we were living so near to each other, the oral consultations were more frequent than the correspondence; but I have brought with me here to-day a large number of his letters,—all of them having reference to his labors in our behalf, and many of them containing interesting and important suggestions as to the work in which we were engaged. These letters, thirty-two in number, seem to me to belong to the history of our Institution, and I propose to deposit them in our archives. The earliest bears date, November 26, 1866; and the last, July 9, 1874,—less than two months before his death. Some of them were written among the White Hills of New Hampshire, some of them in Florida, and some of them in Italy and France, while he was travelling abroad for his health. The last two—as well as a few of the earlier ones—were addressed to me while I, in my turn, was absent from our own country. They all alike bear witness to his devoted interest in this Institution, and to his untiring labor in its behalf. If my own letters to him, of which I kept no copies, shall happen to have been preserved by himself or his family, they will show, in connection with his own, the measures which were taken for securing the Mortillet Collection, the Clement Collection, the Castellani Vases, the Cushing relics from Mexico, and the grand collection of Danish Flints of Mr. Wilmot J. Rose, all of which were obtained through my intervention, with his counsel and coöperation, for purposes of comparison with the pre-historic specimens of our own land. It may well be doubted whether those collections, or any others at all comparable to them, could have been secured at a later day, or under any other circumstances than those, of which we were so fortunately in the way of taking advantage, at the precise moment when they were obtained. We should seek for them in vain now, either at home or abroad.

No more patient, persevering, skilful and thoroughly scientific person could have been designated for the work of founding and

building up such a Museum as this than Jeffries Wyman, and his name deserves to be associated with that of Mr. Peabody himself, in the history of the rise and progress of the Institution. At some future day, it may be hoped that portraits of them both may adorn these walls. The modesty of Professor Wyman was as remarkable as his merits, and he was satisfied with accomplishing his work from day to day, and from year to year, without seeking to display his own labors in organizing and developing the Institution which had been committed to his charge. All the more ought we to take care that his name should be ever remembered, prominently and preëminently, in connection with this Museum, and should be inscribed on some appropriate part of its inner walls, as its first Curator; I had almost said, its creator. His personal qualities endeared him to all who knew him, and I count my own relations with him for eight years among the most valued privileges of my life.

Under his superintending care, the Institution was rapidly developed, while at the same time, the interest in this department of science, in Europe and in our own land, was steadily increasing year by year, as Dr. Walker predicted it would do. The marvelous discoveries of Dr. Schliemann—to name no other name—have given still a new and stronger impulse, of late, to the search for whatever may be found in mounds, or barrows, or bogs, or glacial drifts,—at the bottom of lakes, in caves or in shell heaps, as well as under the débris of ancient cities,—to throw light on the history of the past. And thus, at the end of ten years since our organization, Mr. Peabody's foundation is amply justified; and nobody, I think, would now desire it to have been any other than what it was.

In entering our new Hall, to-day, we do not forget our indebtedness to our Associate Trustee, Col. Lyman, and to our friend Prof. Alexander Agassiz, for their devoted attention to the erection of this building, from its inception to its completion. We do not fail, also, to remember gratefully the faithful services

of our Treasurer, Mr. Salisbury, under whose care the fund appropriated to this purpose by Mr. Peabody was accumulated, until it had reached the amount prescribed before the edifice should be undertaken.

Nor can we omit our acknowledgments of the diligent and untiring services of our present Curator, Prof. F. W. Putnam, and his Assistant, Mr. Lucien Carr, by whom the laborious work of transferring our collections to this new building, and arranging them in its various apartments, has been so satisfactorily and successfully performed, and under whose auspices so many valuable additions have been made to the Museum. Happily these gentlemen are all with us to enjoy their best reward in witnessing the grand consummation of their labors.

And now, Gentlemen, in taking possession this morning of a Building which, we trust, is not only to outlast us all, but to be the scene of scientific labors and acquisitions in future and far distant generations, I may be permitted to invoke for the Institution not merely the favor of our fellowmen, but the blessing of God;—remembering those words of the great father of modern science, Lord Bacon, who would have had everything dedicated alike to “the relief of man’s estate and to the glory of the Creator.”

There are but few passages more striking among the voluminous writings of Bacon which are left to us, than the little “Student’s Prayer,” as he entitled it, which he seems to have composed while he was engaged on his “*Novum Organum*” and his “*De Augmentis Scientiarum*.” After some formal opening phrases, he proceeds: “This also we humbly and earnestly beg, that human things may not prejudice such as are Divine; neither that from the unlocking of the gates of sense, and the kindling of a greater natural light, anything of incredulity or intellectual night may arise in our minds towards the Divine Mysteries; but rather that by our mind thoroughly cleansed and purged from fancy and vanities, and yet subject and perfectly given to the Divine Oracles, there may be given unto Faith the things that are Faith’s. Amen.”

Such words—these very words—might well be inscribed on the walls of every student's chamber, and of every hall of Modern Science. They breathe a spirit worthy of being devoutly cherished by all who deprecate any needless conflict, or wanton contention, between Science and Religion.

It was in this spirit, as I well know, that our illustrious Founder endowed this Institution. It was in this spirit, as I remember well, that President Walker advised its acceptance, and urged upon me the appointment of Jeffries Wyman as its Curator. It was in this spirit, as we can all bear witness, that the lamented Wyman himself pursued his work and prosecuted his investigations. And, certainly, it is in this spirit, that, having counselled and coöperated with them all, I shall maintain my relations to the Museum, agreeably to Mr. Peabody's assignment, as long as life and health shall enable me to watch over it. And may the blessing of God rest upon all our counsels and labors!

REPORT OF THE BUILDING COMMITTEE.

THE Building Committee of the Peabody Museum herewith give, as their report, the following description of the Building, furnished by the architect, with the accompanying photograph and drawings showing the elevation and interior arrangement.

Respectfully submitted,

THEODORE LYMAN, }
ASA GRAY, } *Committee.*

To

THEODORE LYMAN, Esq.,

*Chairman of the Building Committee of the Peabody Museum
of Archaeology and Ethnology, Cambridge.*

DEAR SIR:—The following is the description of the New Museum Building at Cambridge.

The work was commenced early in July, 1876; the walls built and the roof finished about the middle of December; the work was then stopped, and the building closed for the winter; the plastering, laying floors and finishing were done the following spring and summer.

The outside walls are built of dark red brick, laid in black mortar, with brown stone belts, window sills, caps and main cornice, with granite steps and underpinning.

The external dimensions are 87 ft. from North to South and 44 ft. from East to West. The First floor is about 5 ft. above the ground, the main cornice 52 ft., the top of Mansard story at gutter about 61 ft., and the highest point of roof 72 ft. The view in this report, taken from a photograph, will show the external appearance of the building.

There is a Basement Story 11 ft. 6 in. high. First and Second Stories each 22 ft. 2 in., each having galleries 7 ft. wide in rooms, and 5 ft. wide in halls, and a Mansard story 11 ft. high. The plans in this report will show the arrangement of the rooms.

The South Basement room is finished and fitted up as a work room; the North room is for fuel and storage; the Hall contains steam boiler of the Heating Apparatus, the floor over this being made of iron beams with

brick arches turned between them. The Elevator runs in a brick shaft, from Basement to Attic, having an opening at each floor and gallery. The closets marked on plans are fitted with wash bowls and water closets; and in these closets runs a stand-pipe, with hose couplings at each floor and gallery.

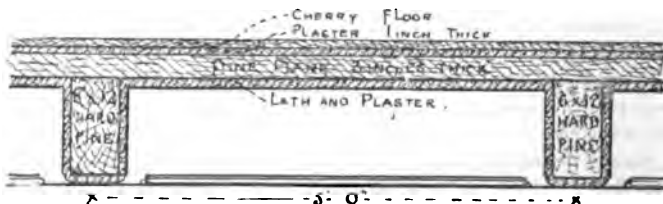
The Vestibules between elevator and closets at each floor, have arched doorways in external brick walls, now closed up, but to be opened whenever an addition shall be put up on the West side.

The foundations are unusually strong, the bottom course of stone being about 7 ft. wide. The brick walls of Basement being 2 ft. 4 in. thick. First Story walls, 2 ft. thick. Second Story walls 1 ft. 8 in. thick; all being hollow walls, having a 4 in. air space between the inner and outer walls. The walls of the Mansard story are 1 ft. thick. All the inside partition walls are brick, built up to the roof boards. All the walls are plastered directly on the brick, leaving no spaces for fire to draw through, or to lodge vermin.

The floor of First Story Hall is formed of iron beams and brick arches, and on these is laid a pavement of Baltimore red tiles 8 in. sq., with a border of light colored New Brunswick free stone and Vermont green slate.

All the other floors are formed with girders 12×12 and 8×16 and floor joist 6×12 in. all hard pine; the joists placed 5 ft. apart; on these are laid 3 in. white pine plank, matched; on this planking is spread a coat of lime, hair and sand, mortar and plaster of Paris, 1 in. thick; the finished wood floors are laid over this. Cherry in First and Second Stories and their galleries, and Hard Pine in Basement and Attic.

On the under side of the 3 in. floor plank and all around the floor timbers, "furrings" half an inch thick are nailed, and on these lath are laid $\frac{1}{2}$ in. apart to allow the plaster to pass freely between them and fill the space between the lath and plank or timber. The corners of the timbers of the First and Second Story timbers are moulded. The construction of these floors show panelled ceilings. The floors are perfectly solid, of wood and plaster, having no air spaces in them through which fire can draw, as shown in the following section showing construction of floors.



SECTION SHOWING CONSTRUCTION OF THE FLOORS

The roof timbers are placed about 4 ft. apart, covered with 2 in. thick white pine plank, matched, and furred, lathed and plastered on under side in the same way as the ceilings.

On the Roof, strips $1\frac{1}{2}$ in. square, 3 ft. 8 in. apart, extending from the ridge to gutters are nailed; the roof is covered with copper turned up against the sides of these strips and capped with copper; this allows for the expansion and contraction of the copper caused by changes of the weather.

The Stairs from the First floor to the Attic are iron; from the Basement to First floor, stone steps built in between brick walls; from the Attic to the floor above, the under side and partition at the side being lathed and plastered in the same manner as the ceilings, and the space under the steps filled with plaster.

All the inside doors are made of two thicknesses of board, with an air space between them, covered on both sides and on the edges with sheet iron.

The Building is heated by steam; and in addition to this, each of the principal rooms has a large open fire place.

STATEMENT OF THE COST OF THE BUILDING.

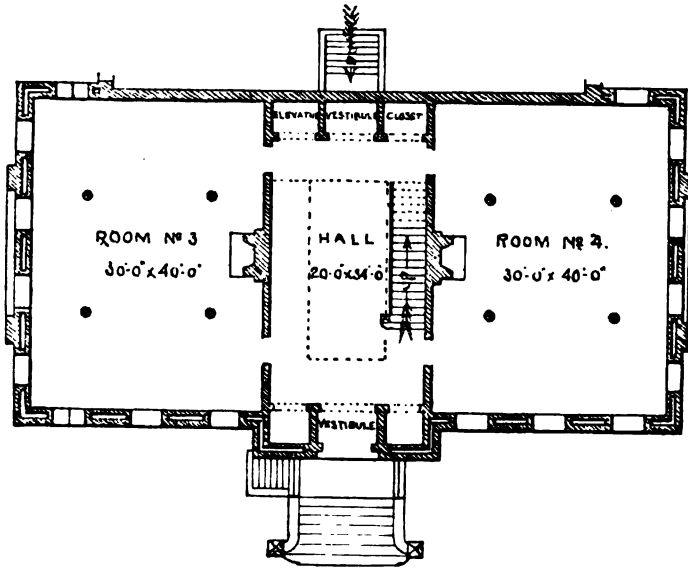
Mason work.	William C. Poland & Son.	\$27,900 06
Carpenter's work.	Hancock & Greely.	10,462 79
Iron work.	G. W. & F. Smith.	4,220 30
Plastering.	John Mack.	2,642 50
Roofing.	John Farquhals Sons.	2,193 93
Elevator.	F. P. Canfield.	500 00
Plumbing.	William Lumb & Co.	470 12
Steam Heating.	Walworth Mfg. Co.	1,918 12
Tablet and Lettering.	E. F. Meany.	116 90
Tiles.		338 43
Bells and Tubes.	Seth W. Fuller.	34 00
Architect		2,500 00
		<hr/>
		\$53,297 15

The above contains, I think, all important points in regard to the building and its construction.

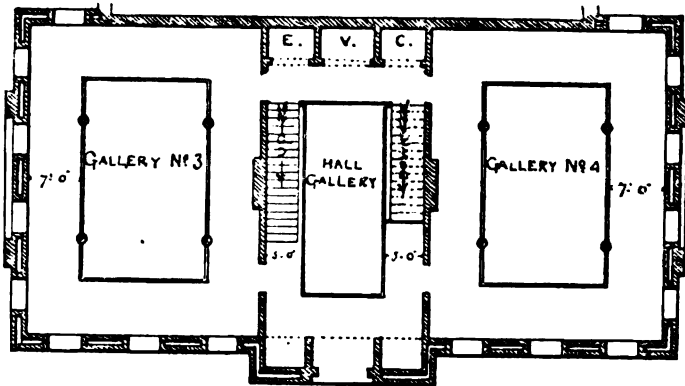
Very Truly Yours,

ROBERT H. SLACK,

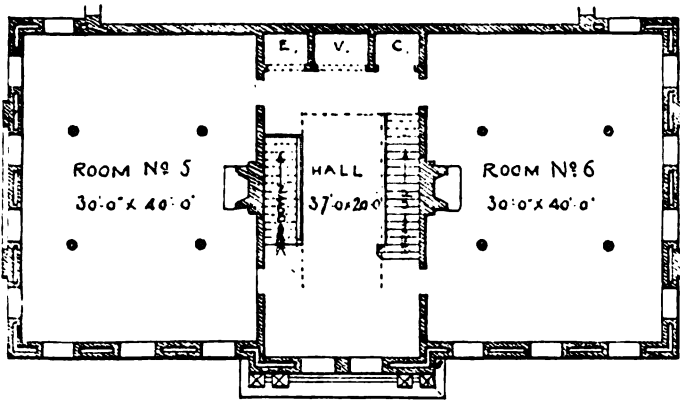
Architect.



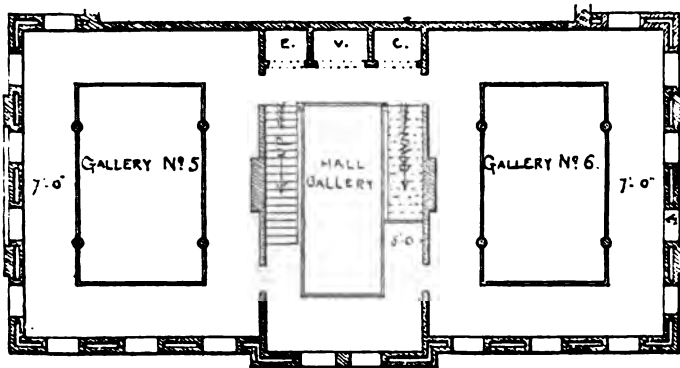
FIRST FLOOR.



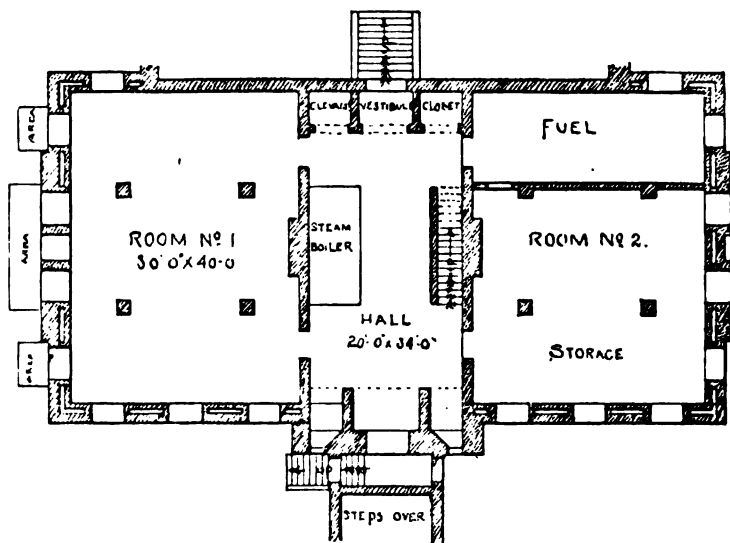
FIRST GALLERY



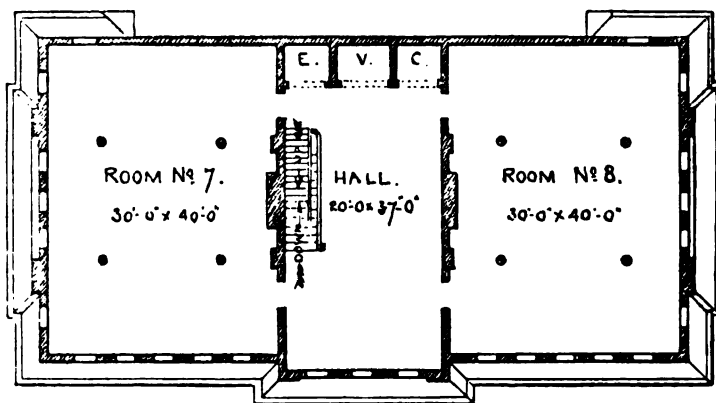
SECOND FLOOR.



SECOND GALLERY.



BASEMENT.



ATTIC.

REPORT OF THE CURATOR.

To the Trustees of the Peabody Museum of American Archæology and Ethnology:—

GENTLEMEN:—With a deep feeling of satisfaction that the valuable collections forming the Museum, are at last placed in a building in every way suitable for their proper arrangement and safe keeping, and congratulating you on the accomplishment of so desirable an object, I have the honor to inform you briefly of the work done in connection with the Museum since the last annual meeting, which was held on the seventeenth of January, 1877.

During the months of June and July last, the collections were safely removed to the upper rooms of the present building. Recently the old cases, which were removed from Boylston Hall, have been placed for present use in some of the rooms, and certain portions of the Museum have been temporarily prepared for exhibition. As it was also found practicable to have the several rooms, hereafter to be provided with cases, shelved in advance of the building of the cases, we are enabled to exhibit upon these shelves such articles as will not be injured by dust, while the present trays and drawers will enable the arrangement of the smaller and more delicate specimens to be carried towards completion, so that when the new cases are finished in each room they can soon after be filled with the specimens they are to accommodate. In this way, as will be readily understood, the collections will be so distributed that they can be used for study and comparison and, in part, exhibited.

Following this plan there have been temporarily arranged, in the northeastern room of the second story, the several collections illustrating the Ethnology and Archæology of Peru, Bolivia and Brazil and, in a more limited manner, some other portions of South America. There have thus been brought together, for the first time since their reception, the several large collections made by

Professor Hartt¹ in the ancient shell heaps and burial mounds in Brazil; the articles received from the Thayer expedition conducted by the late Prof. Agassiz; those presented by Mrs. Agassiz, Mrs. John Dixwell, and a few other contributors to the Brazilian collection. By the side of these are placed the mummies and the collection of pottery and other articles made by Mr. Alex. Agassiz about Lake Titicaca, which, as they show marked differences from the coast Peruvians, have been separated from the collections made by the late Professor Louis Agassiz, and by Mr. Alex. Agassiz, at Ancon, Chancay, Pisagua and other places near the coast. These last and most extensive collections fill several cases in the room, while one corner is devoted to the articles illustrating some of the arts and customs of the present Indians of Peru, received from Mr. Alex. Agassiz. The Blake collection, of which mention will be made, is also arranged in cases in this room; the whole forming a very important Archæological and Ethnological collection in relation to South America. On the shelves in the gallery of this room have been arranged the vases, carvings in stone, and various other articles from Central America and Mexico, including the Cushing collection from Mexico, and several small lots from Central America. In this gallery also have been placed the large articles of the extensive collection from Alaska.

In the opposite room, in temporary cases and on shelves, are now displayed the important collection of pottery from the old mounds and graves of various parts of America north and east of Mexico, the large stone implements, pots and mortars from California and other places, with various articles made and used by the present Indians of North America. There are also temporarily arranged in this room, in several of the old cases, a selected portion of the New Jersey collection made by Dr. Abbott, including the interesting stone implements obtained from the gravel beds at Trenton. Other cases are filled with series of articles from the graves, mounds and caves of Ohio, Tennessee, Kentucky, Utah, etc., while two cases are devoted to an exhibition of the series of pipes from North America. The drawers under the cases

¹ Since this report was put in type the sad news of the death of Prof. C. F. Hartt, by yellow fever, has reached us from Rio Janeiro. By his death science has lost a devoted worker, and the Museum one of its faithful friends. At the time of his death Prof. Hartt was engaged in the performance of his duties as Director of the Geological Survey of Brazil.

contain arrowheads, spearpoints, knives, celts, small axes, and other specimens illustrative of the Stone Age of North America.

In the gallery of this room a temporary arrangement is made of the various large articles from the Pacific Islands, Africa and Asia.

For the present, the collection of pottery from Etruria, and the large articles from the Swiss Lakes and other European localities, are placed on the shelves in the first southern gallery, and it is proposed to reserve the room itself (the one in which you are now assembled) as a 'Trustees' room, library, general office and reception room. It is also the room best adapted to class instruction and other similar purposes.

The northeastern room on the first story, with its gallery, has been kept free of specimens in order to allow of its being the first to be furnished with the new cases. When this room is cased, it is then proposed to arrange a series of collections made by selecting, from all portions of the Museum, such articles as will illustrate the development of Man toward civilization, as shown by his inventions, arts and manufactures from remote times.

In such a series of collections it will be the object to show, as nearly as may be, the sequence of inventions; while in the several ethnological arrangements, in other rooms, all that relates to the past and present condition of each nation will be exhibited as far as possible.

In the northern room of the third story the osteological collection is in process of arrangement. This now consists of about seven hundred crania of various races of man, several perfect skeletons and many human bones from various places. Particularly rich is this collection in crania and bones of the North American Indians, of comparatively recent times, from California, Florida, New England, etc.; of the Stone Grave race of Tennessee; of the mounds of Kentucky and Tennessee; of the Peruvians and Sandwich Islanders; also in crania from the ancient graves in Italy, being the collection presented by Col. Lyman; and, in addition, many important crania from other parts of the world. This collection also contains a very interesting series of bones illustrating diseases, malformations, etc.

The southern room of the upper story is the work room of the Curator, and will contain the articles received from the unpacking and general work room in the basement, preparatory to their final distribution to the cases, or during their special study.

From this hasty review of the contents and adaptation of the seven rooms and four galleries, which have been mentioned, to the various purposes of the Museum, a general idea of the building has been conveyed. It only remains to be stated that the building is heated, throughout, by steam, while open fire places for ventilation and special heating are in five of the rooms.

A special feature in the construction of the building, is the method by which it has been made fireproof by enclosing all the wood work, from the basement to the roof, in plaster and cement, the light wood floors of the rooms also being laid on plaster.

From the care that has been given, by the Building Committee and the Architect, to the important subject of cases, it is believed that these will, when completed, prove as perfect and durable as can be expected at a reasonable expense.

Much work on the collections has been accomplished during the year by Mr. Carr and myself, and for a few weeks we had the assistance of Mr. Lucien Carr, jr., who devoted himself to repairing broken pottery in a skilful manner, and to painting, very neatly, the catalogue numbers on several hundred articles. The time taken for this essential labor is very great and can be exemplified by the fact that an entry under one number in the catalogue often involves the painting or writing of the number, now made up of five figures, on one or two hundred specimens.

Among the objects that we have felt it important to accomplish, has been that of arranging and cataloguing the collections made by the former Curator during his examinations of the various shell heaps in Florida and New England, which, as I mentioned in my first report, have been kept in bulk, as Professor Wyman was about beginning their arrangement at the time of his death. I am glad to be able to state that after several weeks of our united labor, the Florida collection, consisting of many thousand articles, has been properly entered in the catalogue and is now arranged in drawers. The smaller collection from the shell heaps of New England will, we hope, be likewise arranged during the present year.

We are indebted for special assistance in the Museum, to Dr. C. C. Abbott, of Trenton, New Jersey, who, during a visit of several weeks in the past autumn, selected and arranged, in temporary cases, series from the large collection of stone implements he has, at various times, made for the Museum, including those received from

the Peabody Academy of Science at Salem, and mentioned in the last report. To Dr. Abbott the Museum is also indebted for several lots of specimens which he collected during the year, as will be seen by the items in the list of Additions to the Museum.

To Mr. T. G. Cary, we are under obligations not only for the several articles he has personally presented to the Museum, but also for the interest he has induced others to take in its objects, which has resulted in the addition of valuable specimens.

Mrs. John Dixwell, of Boston, has most liberally presented to the Museum a very interesting and valuable collection of weapons, ornaments, pottery, etc., from the Pacific Islands, Australia, Africa, India, China, and North and South America. This collection was made, as opportunities offered, by her husband, Dr. Dixwell, and was finally presented to the Museum, in the name of Mrs. Dixwell, at the same time with several stone implements given by himself. Now that the rapid spread of commerce is causing the disuse of the rude weapons and ornaments of savage tribes, especially on the islands and sea coasts, it is yearly becoming more difficult to obtain such articles as those presented by Mrs. Dixwell, and as it will soon be impossible to secure similar articles of savage workmanship, a boon is conferred on science whenever a private collection of this character is placed in a public Museum.

To Mr. Percival L. Everett, of Boston, we are under obligations for a valuable collection of coins and medals, made several years since by Mr. William G. Hunter, of Canton. This collection consists of coins and medals from China, Corea, Cochin China and Japan, dating from the second and third centuries B. C., to the present century.

Among the most important additions, during the year, is that of the well known collection from Peru, made by John H. Blake, Esq., of Boston, about forty years ago. This collection for several years has been on deposit in the Warren Museum. From it has been derived the data of much that has been written on the interesting mummies of Peru and the articles associated with them. Morton studied the crania of this collection and he figures one of the mummied heads in his great work; while the two elongated skulls of children have not only been figured by Wilson, but have been the subject of remarks and controversy by Wilson, Davis, Wyman, and others. Many of the articles have been particularly described by Professor Wilson, in his "Prehistoric Man." Thus the collection

has a double value, and the care that should be given to its preservation cannot be overestimated. Mr. Blake has added to the interest of this important collection by furnishing notes and drawings which I herewith submit as a special paper to accompany this report.

From the Imperial University of Tokio, Japan, we have received a very interesting collection of fragments of pottery, a few implements of bone, and other articles, from a shell heap at Omori, near Tokio. These articles were collected by Prof. E. S. Morse and other gentlemen connected with the Imperial University, and are of special interest as being the first obtained from the shell heaps of that country.

The Smithsonian Institution has presented to the Museum a very interesting series of burial jars, and smaller vessels of pottery, beads made of various substances, etc., all obtained from old burial places on the Island of Omotepec, in Lake Nicaragua, by Dr. Bransford, of the United States Navy, who has been making extended explorations on the Island, under the direction of the Smithsonian Institution. There have, also, recently been received from the Smithsonian Institution, eight large boxes of specimens containing a valuable collection of articles from the burial places and shell heaps of Southern California and the Islands off Santa Barbara. These specimens, mentioned in detail in the list of additions to the Museum, were in part collected at the joint expense of the Museum and the Smithsonian Institution, and are in return for the aid given by the Museum to the work of exploration conducted by the Institution.

Among the specimens of peculiar interest, which have been received during the year, are two human crania with a tibia and a humerus from Mr. Manly Hardy, of Brewer, Maine. These were found in a shell heap on the coast of Maine, under such conditions as to indicate cannibalism. Professor Wyman has fully established the fact that the early inhabitants of Florida were cannibals, as shown by the remains in the shell heaps there, and has, by historical evidence, shown that the custom existed among the Northern Indians. Fragments of the human skeleton have also been found sparingly in the shell heaps of Massachusetts; but this discovery of human remains in the shell heaps by Mr. Hardy is, as yet, the only evidence we have received of cannibalism among the shell heap people of New England. With the statement that Mr.

Hardly is to make further investigations of the deposits in question, in behalf of the Museum, to ascertain, if possible, that the position of the bones was not due to secondary burial, which their number suggests, I quote the following from his letter accompanying the gift of these interesting crania.

"Aug. 31, 1877, I examined a shell heap near south end of Great Deer Isle, Penobscot Bay. This heap was about three feet in depth and extended from forty to fifty feet on the front or exposed side. We found a number of pieces of earthen vessels, all ornamented, the most having rows of deep cuts or grooves on them in parallel lines. One piece had two holes about an inch apart, evidently to fasten a handle by. We also found the corresponding piece, one of the holes in this being broken through the centre. I found by striking a circle which just corresponded with the curvature of these pieces that the diameter was exactly six inches. There were the bones of many kinds of sea fowl and fish, intermixed with numerous evidences of fires, also various sea shells and many shells of the common land snail, these last being found all through the entire extent examined. Some beautiful pieces of quartz were found, evidently brought from a long distance and used to strike fire, also a flint arrowhead and part of a bone needle. After digging some twenty feet horizontally, I found a human bone, a femur, and near by some twenty or thirty more bones of legs and arms, a sternum, and portions of a pelvis, but no vertebræ or ribs. The long bones nearly all lay in a slanting position, many of them broken, and the corresponding parts either missing or not near enough to them to be identified as belonging together. They had no more apparent connection with each other as the bones of skeletons, than any heap of bones among kitchen refuse would have, and were mixed with bones of moose and beaver, whose teeth were found in considerable numbers, and were mixed with ashes and remains of fires. Below all these I came to a lower human jaw lying upon the top of a skull, the jaw was lying teeth side up, but contained but one tooth. In working carefully round the skull, which was placed crown up, I found another skull laid upon its side with the part which joined the neck pressed so close to the first that a knife blade could hardly be placed between them; on taking them out, the jaw fitted to the one on which it lay and this had but one tooth in the upper jaw. The under skull was without a lower jaw, neither could I find any near it. This skull had nine teeth in the upper jaw. These skulls rested on virgin, yellow earth, which showed no traces of fire or of ever being disturbed. A piece of granite projected on one side of the upright skull and the skull was hard against it. The second skull touched this on one side, and on the other was another rock. The two skulls being so closely wedged between the rocks that it was very difficult to remove them. Above them on one side, I saw several more long bones projecting from the shells; but not having time for more extended search I carefully reinterred all the bones exhumed except the

skulls and the bones sent you with them as specimens. I have been thus minute in describing the exact position of things that they may afford reasons for the conclusion, which both myself and the Indian who assisted me, came to independently. His first remark after we had examined everything was, "these people eat each other." No one, looking at the bones as we found them, mixed with kitchen refuse, lying without any connection, many of them broken and parts gone, and especially the two skulls underneath the whole, with the lower jaws detached from each and placed in such a position as they never could have been if buried in connection with the rest of the body, could come to any other conclusion."

For further information in relation to the Additions to the Museum during the past year, I must refer to the list annexed, which contains a summary of the two thousand eight hundred and sixty entries that have been made in the Museum catalogue during the year.

In regard to the Additions to the Library I must also refer to the annexed list, as with the exception of the continued receipt of several serials and other publications from the President of your board, no special mention need be made of the addition of forty-two volumes and eighty-one pamphlets to the small though important reference library of the Museum.

The Special Explorations made under direction of the Museum during the year, have resulted in more than ordinary success.

Dr. C. C. Abbott has continued his investigations in relation to the stone implements found in the glacial deposits at Trenton, New Jersey, and has been rewarded by the discovery of numerous specimens of rude, but unquestionable implements made by man. The notice of these implements of great antiquity, the oldest yet found on the Atlantic coast, given in the last published report, has caused considerable comment, and special interest in the locality, by both archæologists and geologists, and there is now no doubt that the disputed points, as to the exact relation of the deposit to the glacial period, will be carefully investigated. For a full statement and discussion of the subject, I refer to the elaborate second report by Dr. Abbott, hereto annexed.

Dr. Edward Palmer, acting under the special appropriation for explorations made at the last annual meeting, has made a careful examination of several mounds in Southern Utah, from which numerous articles of pottery, bone and stone were obtained. The notes and descriptions furnished by Dr. Palmer, show that most

of these mounds in Utah are in reality, the remains of adobe or mud houses, and that in some instances new houses have been successively erected on the remains of the old. In other instances the mounds are formed by the decay of a collection of houses built in such a way as to form a nearly continuous wall about an area thus enclosed, on the same principle as that suggested by the Hon. Lewis Morgan in his discussion of the probable use of the great artificial embankments in the Ohio valley. The only difference being, that in Utah the walls of the houses formed the protection to the area enclosed; while in Ohio, according to Mr. Morgan's theory, an earth wall was first raised, upon which houses were erected. It is evident that the latter method would give far greater protection to the inhabitants than the former. From the character of the articles found in these mounds in Utah, and especially from the pottery, we have some evidence that the people were the same as those who lived in the cliff houses of the Colorado region, and in the ruined Pueblos, and are probably represented at this time by the Moqui, Zuñi and allied tribes. These adobe houses of the plains of Utah may possibly have been temporary residences of some of these tribes during portions of the year, or they may have been the locations of out-lying bands until the inroads of other tribes forced the people to the cliffs for protection. In this connection it is of interest to note the discovery, by Dr. Palmer, of a skeleton in one of the mounds, and that the cranium, the measurements of which are given in another place, is remarkably broad and low. Dr. Palmer also had the fortune to discover a cave in Kane County, Utah, in which were two perfect vessels of the Ancient Pueblo type of pottery, one of which was filled with small coils of cord finely made from some kind of bark or strong vegetable fibre. In this cave was also discovered a unique article in the form of a spade, made by flattening a piece of horn and fixing it to a long handle of wood. At what Dr. Palmer believes to have been an old camp of the Pah Utes, in the mountains, he discovered several interesting articles, among which was a pair of shoes made of the fibre of the *Yucca*, which, in shape, style of braiding and several details, very closely resemble those made of the leaves of the *Typha*, which I had the good fortune to find, a few years ago, in a cave in Kentucky. Dr. Palmer also obtained a very instructive and important collection of articles made and used by the Pah Ute Indians, while the notes, which accompany

each article, stating the particular use to which it is put, the method of its manufacture, or the material from which it is made, etc., add materially to the value of the collection.

Mr. Paul Schumacher, who, probably, of all collectors has made the most extended and important investigations of the old shell heaps and burial places on the coast of Oregon and California, has, during nearly four months of the past year, devoted his attention to the Islands of San Clemente and Santa Catalina, acting under a special appropriation which you made for the purpose in July last. The returns from this exploration have been large, and many of the articles are of peculiar interest. These islands when discovered by Cabrillo in 1542, were settled by numerous tribes similar to those of the main-land. About forty years ago, the remnants of these tribes were removed from the islands.

In connection with this collection I have the pleasure to state that the officers of the freight department of the Pacific Rail Road Company made liberal concessions for its transportation.

The collection secured by Mr. Schumacher from the shell mounds and burial places, consists of mortars and pestles, made from hard stone; cooking pots, small vessels and other articles cut out of steatite; pipes, perforated stones of various sizes and material; a number of fine daggers, knives and arrowpoints; a single stone axe of same shape as those from the Atlantic coast; and very many other forms of implements; several interesting carvings in stone; various articles made of bone and shell; a great quantity of shell beads; about thirty human crania in good condition, the perfect or nearly perfect skeletons of two or three individuals, and parts of many others. Besides the collection of articles of Indian manufacture, numerous things of European make, of which the Indians obtained possession, were found in the graves, particularly on the Island of Santa Catalina. Mr. Schumacher has given an account of the method of manufacture of several of the articles, which I here annex as a special paper, and has written as follows in regard to the investigations made for the Museum:—

“Permit me to give you an outline of the results of my investigations of aboriginal remains, on the islands of San Clemente and Santa Catalina, off the coast of California, undertaken at the expense of the Peabody Museum, during the months of August to November of this year.

On San Clemente, where we had to work under great disadvantages, on account of the extreme dryness in this year of drought, and the lack of

drinkable water caused by the negligence of the captain of the schooner, our small party spent twenty-five days. The island, which is of volcanic formation, rose gradually from the ocean, attested by distinct sea-levels which are especially remarkable on the southwest side where they rise in well defined terraces to a plateau, increasing in number where the elevation is higher, or the formation such as caused intermediate watermarks. It is barren, without any water in streams or springs. The plateau, on which some light sandy depressions and rising ground occur, is, at intervals towards the southeast end, intercepted by deep fissures or *barrancas* in some of which water, derived from the rains in the winter, is stored in rock-worn basins, lasting even in dry seasons, but is so difficult of access, and for a stranger almost impossible to find, that no reliance can be placed on a water supply from this source. The southwestern shore is a rough coast which affords but few places in which a landing can be effected; while the northeastern or inner shore is high and abrupt, and although easily reached by boat, is only at a few places of practical access. For this reason we did not rely on a boat for transportation, but brought along with us pack-animals to move our collection to a convenient landing. As no feed could be found this season—the sheep, which overrun the island, dying rapidly—we always had to carry along on our expeditions, both feed and water for the pack-animals.

The shell mounds are principally located on the plateau, on inclines and such places of sandy nature whence the shores are easily accessible; but by far the best results were obtained on the extended dunes which enclose the northwestern end. The lower end of the dunes, where the shell deposits are especially abundant, it was noticed, is at the drainage of a large area, and I was informed that springs existed in early times on several places in the low depression, of which, however, none can be traced now, being likely covered by the encroaching sand. Similar favorable indications for a natural supply of water exists further towards the northwest and near an isthmus where a good landing can be made, especially in the northeast blight. Where ever the access is easy, we found the shell mound destitute of relics, and only on those distant from any landing place did we make valuable collections.

I did not notice any difference in the mode of burial on San Clemente from that observed at a previous time on San Nicolas Island; it being single graves occurring at short intervals in sand, without any other covering, or partitions. None were found in wrappings covered with asphaltum. As on San Nicolas, the greater portion of our collection was obtained on the surface of the shell mounds; and here too we found to our sorrow that the larger utensils, the well worked, and often rare articles were broken by vandals and scattered about. It is said it was done at the request of the priests at the time of annexation of the last of the inhabitants to their missions; surely, it must be admitted the destruction was done with some design, for else nobody would have taken the trouble of doing the work so thoroughly.

About the southeast end, in the faces of steep declivities and along the

bluffs of *barrancas*, many natural caves exist in the basaltic formation, some of which had served for abodes, as proven by the abundance of kitchen-middens which manifests itself for a long distance by light shining color. These caves, often difficult of access and requiring much exertion in reaching, are now the resort of sheep, where they, too, find protection against the scorching sun during the summer, and the rains in the winter. The caves added very little to our collection, nothing of which was of peculiar interest.

From here we sailed to Santa Catalina Island, where we arrived about the middle of the month of September, and remained two months.

We pitched our first camp at our old station, the Isthmus. This locality with its once populous *rancheria*, was prominently mentioned in the narratives of chroniclers, since the discovery in 1542. At our previous short visit the remains of the *rancheria* were readily found, but this time we succeeded also in the discovery of the graves which contributed so largely to our treasure. We have also traced, I believe, the water source mentioned by Padre de la Ascencion, in Little Springs, located about two miles and a half to the southeast, by trail, no doubt the trail of old, which still leads pass some sites of former huts.

The subject of the manufacture of pots, which I have followed up during several years past, was solved by the discovery of the quarries of pot-stone, at Little Springs, Pots Valley, and other localities, of tools and pots in all stages of finish. I consider this discovery the very interesting feature of the collection herein equalled by no one made on this coast. My observations thereon and the mode of manufacturing some other articles, I give in a special paper.

Some shell mounds succumbed to the incroaching ocean, as for instance at Little Harbor, on the southwestern shore, where only the two ends remain, indicating the extensive area it formerly covered; another near the southeast end on the eastern shore, and one in front of the house of Mr. Whitley, have suffered by the action of the ocean, yet some interesting results were obtained, especially at the latter station. On this island, too, we found shell mounds in the interior, mostly located near springs, small streams, passes and localities in which pot-stone was quarried.

The remains are in the main like those found on the other island and the adjoining mainland, the people of which were no doubt of the same race and in close connection. In striking variance, however, is a grooved stone hatchet exhumed in Pots Valley, the only one thus far found on the California coast, to my knowledge.

I cannot account for the scarce occurrence of the cooking pots, on Santa Catalina where they were extensively manufactured, especially of the large ones so frequently found on the southern California coast. This singular fact seems to invite us to comparison with modern notions according to which the home manufacture is considered of less value than the foreign commodities received in return. The scarcity of stone knives is in part explained by the absence of the material of which they consist, and moreover by the adoption of knives made of bones, which we frequently found."

After the meeting of the American Association for the Advancement of Science, at Nashville, I was enabled, by the kindness of many friends, to make very extensive explorations among the mounds and old burial places in Tennessee. A large earth mound, twenty feet in height by about one hundred and fifty in diameter, was carefully opened. A large burial mound containing between two and three hundred graves was completely explored, and several small groups of graves were also examined, all in the vicinity of Nashville. At the same time Major Powell was engaged in making equally extensive explorations in close proximity to my own, so that we had the advantage of each other's work.

The interest which was taken in my work by friends in Nashville, and the great kindness and liberality with which I was everywhere welcomed, enabled me to accomplish very much more than would otherwise have been possible during the month I had for the investigations. It is with pleasure that I take this opportunity of returning my thanks to the many who so kindly welcomed me and gave me such generous help; and while it is impossible to mention all by name, I must return my particular acknowledgments to Governor Porter and to Colonel Gibbs, the Secretary of State and acting Governor during most of the time of my stay in the state; also to Dr. J. B. Lindsley, Mr. and Mrs. John M. Overton, the Rev. Mr. Matthews, the Rev. Mr. Hargrove, Colonel Cochrane, Prof. Lupton, Colonel Morgan, Dr. Summers, General Thruston, Mr. Edward Cross, and Mr. Edwin Curtiss, to all of whom, as well as to many other friends in Nashville, I was under great obligation. To Miss Gertrude Bowling, the owner of the large estate upon which much of my work and that of Major Powell was done, we were much indebted for the permission to make the extensive excavations which we there accomplished with a united force of about fifty workmen during nearly two weeks. To the Proprietor of the Maxwell House and to the Editors of the "Nashville American," I am indebted for many acts of kindness.

On leaving Nashville I made arrangements with Mr. Edwin Curtiss to carry on the work for some time, and he visited several other localities where he was permitted to make excavations, particularly on the farm of Mr. Edmonson, to whom and to Mrs. Edmonson, he was placed under particular obligations. Mr. Edmonson also gave to the Museum, through Mr. Curtiss, a very large and fine stone dagger, which was taken from one of the stone graves on

his place. The continued work of Mr. Curtiss resulted in obtaining a large addition to the collection of articles, especially of pottery and of crania from the ancient graves. Leaving Nashville, I accepted the kind invitation of Mrs. Lindsley, of Greenwood, to visit her and explore the very interesting group of mounds and earthworks on the Lindsley estate. Here I was most hospitably entertained at the Greenwood Seminary, presided over by Mrs. Lindsley, who gave me every facility in the prosecution of my work, and with the permission of her nephew, Dr. Samuel Crocket, the representative of the present proprietor of that portion of the old estate on which the mounds are located, I made, with the assistance of a large gang of negro workmen, very extensive explorations of the earthworks, during the following week. To Mrs. Henry Lindsley, who was indefatigable in her efforts, and, with Mrs. Putnam, helped to oversee the workmen and take care of the numerous articles found, I am under great obligations. While to Dr. Crocket, Dr. Thompson, Professor Buchanan and several other residents, I was indebted for assistance and for specimens collected in the vicinity. To Professor Buchanan I owe the opportunity of presenting a careful plan of this interesting group of mounds, which will accompany the special report I am now preparing. It is sufficient in this place to allude to a few of the more important conclusions to which I am led by these explorations in Tennessee.

First. The people who buried their dead in the singular stone graves in Tennessee, were intimately connected with, or were of the same nation as, those whose dead were buried in the mounds and cemeteries in Missouri, Arkansas and Illinois, and who made the pottery of which such a large amount has been taken from the burial places in those states. This is shown by the similarity of the crania, by the identity in material, patterns, and finish of the pottery, and by the shell carvings, etc.

Second. This people sometimes buried the dead in cemeteries extending over large areas, and sometimes in mounds, but always, in this section of Tennessee, in graves made by placing slabs of stone so as to form a well made stone cist or coffin. The burial mounds are here formed by the accumulation of these stone graves in irregular tiers.

Third. What have been called the graves of pygmies, as already shown by others, especially by Professor Jones, are simply

the graves of children, or of persons whose bones have been removed from a former grave and re-buried in a small grave.

Fourth. The examination of the mounds at Greenwood, near Lebanon, which were inside an earth embankment enclosing an area of several acres, proves conclusively that in this case (and by inference in all other similar earthworks of which several have been described in the state), the earthwork with its ditch was the remnant of a protecting wall about a village, inside which the houses of the people were built, and their dead buried. Also that the large mounds similar to the one in this enclosure (which is 15 feet high by about 150 feet in diameter) were for some purpose other than that of burial; possibly connected with the religious rites or superstitions of the people, or the erection of a particular building, as shown by the fact that before this large mound was erected a very extensive fire had been built upon the surface, over which the mound was raised; while the remains of burnt bones and other evidences of a feast were apparent: also from the remains of a stake of red cedar. Again, after the mound had been erected to the height of seven feet, another similar and extensive fire had existed, leaving the same evidences of burnt bones, etc., with the addition of burnt corn-cobs. The mound had then been completed, and my removal of probably about one-third of it did not reveal any evidence of its having been used for burial or for an ordinary dwelling, though it is very likely to have been the location of some important building, and the extensive fires, which had twice nearly covered its whole area, might have been owing to the destruction of such a building by fire.

Fifth. The houses of the people were circular in outline, from fifteen to forty feet in diameter, and probably made entirely of poles covered with mud, mats or skins, as their decay has left simply a ring of rich black earth, mixed with refuse consisting of bones, broken pottery, etc.

Sixth. In the Greenwood enclosure the children were always buried within the house, while the graves of the adults were together, forming a low mound.

Seventh. This nation, known as the Stone Grave people in Tennessee, and the Mound Builders in Missouri, were advanced in the primitive arts, and probably cultivated the land to some extent. Of all the people of America, east of the region of the Pueblo race of New Mexico, they were the farthest advanced in the ceramic

art, and were good workers in and carvers of stone and shell. Judging by their earthworks, they were not so numerous a people as the Mound Builders of the Ohio valley. Judged by their works in pottery, their carvings in shell and stone, and their chipped implements of stone, they were in a period of development corresponding with that of their neighbors on the Ohio. They did not burn their dead, as was undoubtedly the custom to some extent among the Ohio Mound Builders. They were workers in copper which they must have obtained by trade or by long excursions. They also had shells from the Gulf or southeastern coast, and used them very extensively in the manufacture of beads and ornaments. They also understood the method of perforating pearls, of which seven were found in the grave of a child. To their children they were evidently attached, as exemplified by the care with which they were buried within the house, and the value of the articles placed with them.

Eighth. The Stone Grave people of Tennessee, judging by the entire absence of articles of European make in the hundreds of graves that have been opened, never came in contact with the white man.

The people may have been the ancestors of some of the numerous Southern nations that existed at the time of the discovery of the country; as suggested by the similarity in the customs given in the early accounts of the Southern tribes having a similar geographical distribution, further than this there is nothing by which to prove the identity of the Stone Grave people with any of the Southern tribes known to history, though it is probable that in some of them their descendants existed.

In concluding this report I have the pleasure of presenting a second paper of the important series on the Ancient Mexicans, by Mr. Bandelier.

Respectfully submitted,

F. W. PUTNAM,

Curator Peabody Museum.

CAMBRIDGE, MASS., Feb. 18. 1878.

• ADDITIONS TO THE MUSEUM AND LIBRARY FOR
THE YEAR 1877.

Additions to the Museum.

11075. Necklace of a medicine man from Alaska.—Collected by Lieut. BELKNAP, U. S. N., and presented by Prof. CHARLES E. MUNROE, Annapolis, Md.

11076. Coat of chain armor from Japan.—Collected by Mr. JOSEPH HECO, of Hiogo, Japan, and presented by Mr. THOMAS G. CARY, Cambridge, Mass.

11077. Stone axe found near the old Fort on Putnam Avenue, Cambridge.—Presented by Mr. THOMAS G. CARY, Cambridge, Mass.

11078. Fragments of crania from the banks of the Tennessee River near Chattanooga, Tenn.—Collected and presented by Mr. F. A. STRATTON, Chattanooga.

11079. An animal shaped stone pan, usually called "Metate," from a grave in Chiriqui, Panama. This pan is perfectly horizontal, stands upon four animal shaped legs, is 117^{mm}. high, and to it is attached the head and tail representing a panther. The legs, head and tail, which is curved over and joined to the right hind foot, are all ornamented with geometrical figures and dots. The outside of the four upright sides of the pan or body of the animal is similarly ornamented. The pan itself is a parallelogram 214^{mm}. long, 185 broad, and 20 deep at the centre. The sides are thin at the top, wider towards the base and gradually curve into the bottom which deepens towards the centre.—Collected and presented by Commodore FOXHALL A. PARKER, U. S. Navy.

11080. Human head, carved from dolerite and covered with two coats of paint, the inner one red and the outer, black. The figure represents the head and neck of a man, and around it the skin of a puma, or "American lion" is so arranged that the upper jaw of the animal rests on the forehead of the human face. A pendant hangs from the top of the head down to the shoulder just behind the left ear.¹—Found in a cave near Acapulco, by Dr. SHARP, about 1856, and presented by Commodore FOXHALL A. PARKER, U. S. Navy.

11081—11082. Chinese calculating machine and a set of Japanese chessmen, with a book of games.—Collected and presented by Mr. THOMAS G. CARY, Cambridge.

¹This interesting sculpture has been described by the Curator in the Bulletin of the Essex Institute for 1877.

11083—11193. A collection of coins and medals from China, Corea and Japan, but chiefly from the former country. They were issued at various dates and under different dynasties, ranging from the 3d century B. C. under the Han Dynasty, to that of Ta Sing in the year 1850 of the Christian era. The inscriptions on some of the Temple Medals are expressive; for instance, on one we find the legend "Drive off evil thoughts," on another "Peace and Tranquillity, together enjoy."—Collected by WILLIAM C. HUNTER of Canton, China, and presented by Mr. PERCIVAL L. EVERETT, Boston, Mass.

11194—11246. A collection of pottery from the mounds in southeastern Missouri, consisting of most of the well-known forms that have given to the pottery of that region its distinctive character. Many of these were figured and fully described in the Eighth Report of the Museum, to which the reader is referred.—By PURCHASE.

11247—11248. Rude stone implements and specimens of natural fracture from the gravel near Trenton, N. J.—Collected and presented by Dr. C. C. ABBOTT, Trenton, N. J.

11249—11250. Human cranium and bones found with it, probably Indian, from a grave at Peter's Falls, West Andover, Mass.—By PURCHASE.

11251. Photograph of the foot of a Chinese lady, artificially deformed.—Presented by Col. THEODORE LYMAN, Boston.

11252. Human cranium from a mound near Lynxville, Wisconsin.—Collected by Judge SAMUEL MURDOCK and presented by Mr. B. W. PUTNAM, Jamaica Plain, Mass.

11253—11261. A drum, models of *baidarkas* with one and three holes, *parka* of reindeer skin, fur coats, with and without hoods, boots of seal skin, a throwing stick and a spear, all from the Pribiloff Islands.—By PURCHASE.

11262—11263. A wooden mask from British Columbia and stone arrowheads from Cotuit, Mass.—Presented by Mr. HOLMES HINCKLEY, Boston, Mass.

11264—11266. Rude stone implements from the gravel of New Jersey.—Collected and presented by Dr. C. C. ABBOTT, Trenton, N. J.

11267. Sketches of the methods of silk production, from China.—Presented by Mr. THOMAS G. CARY, Cambridge, Mass.

11268—11278. Hammerstone, muller, grooved stone axe and fragments of ornamented pottery from Cumberland Gap, Tennessee; pyrites and mica from an Indian grave, stone lined, in Lee County, Va., collected by Mr. CHARLES B. JOHNSON, of Gibson's Station, Lee County, Virginia; burnt bones, flint chips and broken arrowheads and a hammerstone from Turner's Mound, Bell Co., Ky.; fragment of a tube of steatite from Claiborne Co., Tennessee.—Explorations of Mr. LUCIEN CARR, conducted for the Museum.

11279—11280. Rude stone implements from the New Jersey gravel.—Collected and presented by Dr. C. C. ABBOTT, Trenton, N. J.

11281. Stone implement from Newburyport, Mass.—Collected and presented by Mr. ALFRED O-GOOD, Newburyport.

11282. Photographs of the "Gass Tablets," the originals of which were

found by the Rev. J. Gass in a mound near Davenport, Iowa.—By PURCHASE.

11283. A mummied fish, *Muraena flavmarginata* Rüppell, from Egypt.—Presented by Dr. JOHN DIXWELL, Boston, Mass.

11284—11321. Rude stone implements from the gravel; stone arrowheads, spearpoints, knives, drills, scrapers, sinkers, chips and unfinished implements from the surface near Trenton, N. J.—Collected and presented by Dr. C. C. ABBOTT, Trenton.

11322—11333. Stone arrowheads, spearpoints and knives, a perforated stone, and a stone tube, probably a pipe, from Lawrence, Mass.; a metal button found with cranium No. 11249, at Peter's Falls, West Andover, Mass.; an Indian pipe made of wood, from the Rocky Mountains.—By PURCHASE.

11334—11337. Four human bodies from Ancon, Peru.—Collected in 1875 by Mr. S. W. GARMAN and presented by Mr. ALEXANDER AGASSIZ, Cambridge, Mass.

11338—11361. Calvaria and human bones from Haunted Cave, Edmonson Co., Ky., from rock house near Hardinsburgh, Ky., and from mound in Bell Co., Ky.; fragments of pottery, stone flakes and arrowheads from the banks of the Ohio River.—Collected by Prof. N. S. SHALER and LUCIEN CARR, and deposited by the KENTUCKY GEOLOGICAL SURVEY, N. S. SHALER, Director.

11362—11376. Fragments of crania and pottery and shells from caves in Lee County, Virginia, and Claiborne County, Tennessee; fragment of copper band, from a grave near Gibson's Station, Lee County, Va., collected by Mr. CHARLES B. JOHNSON of that place; fragment of cranium showing three fractures from Haunted Cave, Edmonson County, Ky.; stone arrowhead and animal bones from a mound in Bell Co., Ky.; a worked bone somewhat charred, and a flint arrowhead from near Pleasant Hill, Ky., collected by Miss PAULINA BRYANT of that place.—Explorations of Mr. LUCIEN CARR, conducted for the Museum.

11377—11378. Charred Indian corn and a piece of the antler of a deer from the Ely mound, near Rose Hill, Lee Co., Va.—Collected by Mr. WM. P. BATES and presented by the Rev. S. B. Campbell of that place.

11379—11383. Sketches of scenes in Tokio, of wrestlers, fishes, birds, flowers and animals from Japan.—Collected by Mr. JOSEPH HECO and presented by the MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Mass.

11384—11387. Sketches of hawking, of foreigners and their customs, and of different subjects and scenes, some colored, from Japan.—Collected by Mr. JOSEPH HECO, of Hiogo, Japan and presented by Mr. THOMAS G. CARY, Cambridge, Mass.

11388. Rude stone implement from the New Jersey gravel.—From explorations conducted for the Museum, by Dr. C. C. ABBOTT.

11389—11450. Earthen pots for cooking and fragments of pottery, plain and ornamented, some in colors; stone drills, celts, scrapers, arrowheads, spearpoints, disks, pestles and metates; hammer and slickstones and a rude stone axe, with chips and unfinished implements also of stone;

chips and cores of obsidian, and bone awls, from a mound near St. George, Utah; specimen of salt from a mine one hundred miles south of St. George, worked by the Pah-Ute Indians; seeds and plants used as food, or medicine, or in the domestic arts by the same Indians.—Explorations of Dr. E. PALMER, conducted for the Museum.

11451. Fragment of a carved stone from Newburyport, Mass.—Collected and presented by Mr. NATHANIEL LITTLE of that place.

11452. Skull of a Yankton Sioux Indian.—Presented by the ARMY MEDICAL MUSEUM, Washington.

11453—11462. Hammerstones, flat, round, and oval; spearpoints, arrowheads and scrapers of stone from Reading, Penn.—Collected and presented by Mr. A. F. BERLIN, Reading, Pa.

11463—11465. Grooved stone axes and a stone knife from Maryland.—Collected and presented by Prof. CHARLES E. MUNROK, Annapolis, Md.

11466. Photograph of stone implements.—Presented by Mr. H. L. ELLIG, Lebanon Co., Penn.

11467. Photograph of a cranium, imperfect, from a mound near Iowa City, Iowa.—Presented by Prof. FRANCIS E. NIPHER, St. Louis, Mo.

11468. Six grooved stone hammers from Ontonagon, Lake Superior.—Presented by Mr. ALEXANDER AGASSIZ, Cambridge, Mass.

11469—11484. Stone disks, one of them bi-concave and 86 mm. thick; hammerstones, oval and round, with and without finger pits; stone muller, pestle and celts, and one small grooved stone from Marion Co., Tenn.; stone hoe and piece of hematite from Jackson Co., Alabama.—By PURCHASE.

11485—11486. Stone pipe with animal head carved on it, and a carved and perforated polished stone ornament from Bales' Mills, Lee County, Va.—Collected and presented by Mr. J. H. BALES, Bales' Mills, Va.

11487—11505.—Fragments of pottery; bone awls; stone muller, disks, knives, arrowheads, and spearpoints of different patterns from Lee County, Virginia.—Collected and presented by Mr. CHARLES B. JOHNSON, Gibson's Station, Lee County, Va.

11506—11535.—Grooved axes of stone and hematite; stone celts, disks, hoes, scrapers, drills, spearpoints and arrowheads from Gasconade County, Missouri.—By PURCHASE.

11536. Small earthen cone, perforated, found in Athens, Greece, near the old wall.—Collected and presented by Prof. CLEMENT L. SMITH, Cambridge, Mass.

11537—11611. Large oval flint implements found, in a deposit with one thousand others, while digging a cellar on Main St., Beardstown, Illinois, and described by Dr. J. F. SNYDER, in "Report of the Smithsonian Institution" for 1876, p. 438; rude stone implement from the gravel; grooved stone axes; celts, pestles, hammerstones, round and oval, slickstones, hoes, drills, knives, scrapers, arrowheads and spearpoints from the surface near Trenton, N. J.; fish spears from Croswell's creek, Burlington Co., N. J.; human face carved on stone from an Indian burial ground near Vincentown, Ocean Co., N. J.; rude flint implements from Jeffersonville,

Indiana, collected by Mr. ORLANDO HOBBS; rude flint spearpoint, one of a deposit of forty, found three feet below the surface in Isle of Wight County, Va., by Mr. C. B. HAYDEN, of that county.—Presented by Dr. C. C. ABBOTT of Trenton, New Jersey.

11612—11619. Rude and broken stone implements from Reading, Pa.; Indian corn, a spindle, ball of thread, and a wooden implement from graves at Ancon, Peru.—Presented by A. F. BERLIN, Reading, Pa.

11620—11623. Three grooved stone axes and a stone celt from Brookville, Indiana.—Presented by Dr. JOHN DIXWELL, Boston, Mass.

11624—11659. War club, snow shoes, necklace of beads and bear claws, an iron tomahawk, and a pipe of the modern Indians; sash from Mexico; necklace of beetle's wings from Brazil; clubs from Guiana, S. America; clubs, paddles, spears, shark's tooth dagger, stone axe mounted, the handle exquisitely carved, and other articles, also ornamented, from South Sea Islands; boomerang and waddy from Australia; bow and iron pointed arrows from China; Ghorka "kookery" from Hindostan; Malay Creese; wooden pillow, knob kerrie, necklace of beads, and needle with leather sheath or case probably from Africa; water jar from the Western Islands, bow and wooden pointed arrows probably from the Pacific Islands.—Presented by Mrs. JOHN DIXWELL, Boston, Mass.

11660—11691. Earthen burial vases and toys made of same pattern; earthen bowls and vases of different colored clays, ornamented in colors, some with grotesque human faces; fragments of pottery; broken stone implements, and beads of shell, pottery and jade, etc. from Omotepec Island, Lake Nicaragua.—Collected by Dr. Bransford, U. S. Navy, and presented by the SMITHSONIAN INSTITUTION.

11692. Tappa Cloth from Pitcairn's Island.—Collected by Capt. J. S. KNOWLES, of San Francisco, and presented by Mrs. LUCIEN CARR, Cambridge.

11693—11700. Eight earthen jars, some in human form and others with animal and human heads only, from the burial places in southeastern Missouri.—By PURCHASE.

11701. Bowl ornamented with red and black bands, made in the interior of Mexico, about ninety leagues from Acapulco.—Presented by Prof. O. C. MARSH, New Haven.

11702—11703. Stone arrowheads from Longwood, Fanquier County, Virginia.—Collected by Miss SALLIE HOOE and presented by Mr. HUGH THOMAS DOUGLAS, Catletts Station, Va.

11704—11709. Ponchos, scarf and blankets made from the fleece of the vicuna, alpaca and common sheep, by the modern Aymara Indians, near Puno, Peru.—By PURCHASE.

11710—11763.—Stone pipe on which is carved the likeness of an animal and human figure, from Rockford, Illinois, collected by Mr. F. W. KIMBALL, of that place; polished slick stone, six stone celts, and five grooved stone axes, one of them very small and one highly polished; hammerstones grooved and plain, round and oval, with and without finger pits; stone mullers, pestles, spearpoints, scrapers, knives, arrowheads,

chips and cores and implements, or worked stones of unknown use, some perforated; an unfinished carved stone, bird shape; rude stone implements from the talus at the foot of the gravel bluff; fragments of pottery and two earthen pots of the same kind of clay and general style of workmanship as those found in the mounds of southeastern Missouri, all from Trenton, N. J.—From researches conducted for the Museum, by Dr. C. C. ABBOTT.

11764—11770. Grooved stone axe; fragment of a pipestem of clay; stone arrowheads, spearpoints and broken and unfinished implements of same material from Trenton, N. J.—Collected and presented by Master RICHARD M. ABBOTT of Trenton, N. J.

11771—11793. Arrowhead and broken implements of stone; stone celt, disk, and worked stones, some polished, some grooved and others perforated; a piece of worked coal, fragments of pottery, columella of shell, bone implements, and a small stone pipe from the banks of the Tennessee River; arrowheads, spearpoints and knives of flint from Cherokee Co., N. C.—By PURCHASE.

11794—11795. Discoidal stone from a mound near Carthage, Alabama, found in an earthen pot now preserved in the National Museum at Washington and a plummet-shaped implement also from a mound in Alabama.—Collected and presented by Prof. N. T. LUPTON, of Nashville, Tenn.

11796. A small ball of hematite, from Tennessee.—Presented by the Editors of the Nashville American.

11797—11800. Flint knife; perforated shell, and shell beads.—Collected by Mr. E. CURTISS, from a cave on the Cumberland River, and presented by Gen. G. P. THURSTON, Nashville, Tennessee.

11801—Ornamented shell disk with scalloped edges from Nashville, Tennessee.—Collected and presented by Col. J. D. MORGAN of that city.

11802—11803. Fragment of pottery, and a spearpoint of flint from Falls of the Ohio.—Collected and presented by R. S. ROBERTSON, Esq., Fort Wayne, Indiana.

11804. Small implement of hematite, hemispherical in shape, Nashville, Tennessee, near Love Mound.—Collected and presented by Mr. THOMAS B. BALLOU, Nashville.

11805—11807. Scraper, spearpoint and knife of flint from Lebanon, Tennessee.—Collected and presented by Mr. STEPHEN SIMMS, Lebanon.

11808—11813. Earthen pot with two handles, animal bones, shell of Busycon, fragments of pottery and human cranium from a cave near Rome, Tenn.—Collected and presented by Dr. J. L. THOMPSON, Lebanon, Tenn.

11814. Skull of a Comanche Indian.—Presented by Dr. T. O. SUMMERS, Nashville, Tenn.

11815—11816. Skull and a stone celt from Mr. Overton's Farm, six miles from Nashville, Tennessee.—Presented by Mrs. JOHN M. OVERTON, of that city.

11817—11819. Shell disk, arrowhead of flint, and a discoidal stone of quartz, from a stone grave on Mr. Overton's Farm, six miles from Nashville, Tenn.—Collected and presented by Mr. EDWARD CROSS, Nashville.

11820—11823. Skull, fragment of pottery and stone knife, drill, scraper and arrowheads from a field near Love Mound, near Nashville, Tenn.—Collected and presented by Major J. H. COCHRANE, Nashville, Tenn.

11824. Skull from stone graves on the site of Fort Zollicoffer, Nashville, Tenn.—Collected and presented by R. S. ROBERTSON, Esq., Fort Wayne, Indiana.

11825—11828. Fragments of crania and an under jaw, shells and pieces of pottery from stone graves on the site of Fort Zollicoffer, Nashville, Tenn.—Collected and presented by Mr. H. N. RUST, Chicago, Ill.

11829—12102. Collection of human remains, pottery, implements and ornaments of stone, bone, shell, etc., etc., from mounds and stone graves in Tennessee.—Explorations of the Curator, for the details of which see special report.

12103—12277. A collection of articles in use among the Pah Ute Indians, including hair brush; rabbit net and sticks used in stretching it; a cradle board; water jar made of basket work and lined with pine gum; baskets of different shapes and patterns, some of them in the form of bowls are water tight and used in cooking, others with fans attached are worn on the back and used in gathering seeds; hats and sandals of the same material; paint, bows, and arrows with wooden, stone and iron points; metates and grinding stones; earthen cooking pots; a bed made of strips of juniper bark; spoon made of horn; and seeds and plants used as food or medicine. An earthen pot filled with strings; cooking stone, corn cobs, pine nuts and roasted agave, fragments of pottery, small earthen jug, small basket and a shovel made from the horn of a mountain sheep and mounted on a long wooden handle from a cave near Johnson, Kane County, Utah; earthen bowls of colored pottery and fragments and disks of the same; bone awl; red, white and yellow paint; shell ornament; arrowheads of chalcedony; obsidian cores and chips; animal and human bones; metate; plain earthen cooking pot, from mound near St. George, Southern Utah; earthen pots and bowls, said to have been found south of Santa Fé, New Mexico, purchased from Mr. J. L. BARFOOT, Salt Lake City; also a collection from mounds at Paragoonah and Payson, Utah.—Explorations of Dr. E. PALMER, conducted for the Museum.*

12278. Stone celt from Davidson County, Tennessee.—Presented by Mr. CLARENCE L. GODSHALL, Nashville.

12279. Stone mask from Palenque, Yucatan.—Collected by Hon. J. R. POINSETT and presented by AMERICAN ACADEMY OF ARTS AND SCIENCES, Boston.

*In his notes on this collection Dr. Palmer says: "The Pah Ute Indians of to-day no longer make any pottery. Some time since I persuaded an old squaw to reproduce from memory a cooking pot (Museum No. 9448) such as was formerly manufactured and in use among them, and forwarded it to you. By comparing it with No. 12131 (of which it is a feeble imitation in miniature), you will see how very inferior it is in quality and workmanship, thus showing how soon former arts are forgotten when once they have ceased to be of daily practice."

12280. An inscribed stone from near Quishaurani, Peru.—Collected and presented by Mr. EDWARD A. FLINT, Boston.

12281. Rude implement from the gravel on Decou's farm near Trenton, N. J.—Collected and presented by Dr. C. C. ABBOTT.

12282—12283. Clubs made of grooved stones, with handles attached, Modern Sioux Indian.—Collected and presented by Mr. J. A. ALLEN, Cambridge, Mass.

12284. Fan from the Hawaiian Islands.—Collected and presented by Mr. J. Q. A. JOHNSON, of Cambridge, Mass.

12285—12286. Scraper and broken implements of flint from Sedalia, Missouri.—Collected by Mr. F. A. SAMPSON and presented by Dr. C. C. ABBOTT, Trenton, N. J.

12287—12294. Stone celts from Swanton, Vt., shell and copper beads from Highgate, Vt., collected by the late Prof. J. B. PERRY; stone implements from Ceara, Brazil.—Presented by the MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge.

12295—12347. Skulls, earthen pot and stone pipe from Bell's Bend, Davidson Co., Tennessee; skulls and human and animal bones; earthen pots, dishes and jars, ornamented and plain, similar to those found in the mounds and burial places of southeastern Missouri; shell spoon; discoidal, sharpening and hammerstones, stone celts, arrowheads and spearpoints; burnt clay and charred bones from grave mounds on Miss Bowling's farm near Nashville, Tenn.—Collected by Mr. E. CURTISS in continuation of the explorations of the Curator for the Museum.

12348. Perforated stone-weight for digging stick from Central America.—Presented by Mr. S. W. GARMAN, of Cambridge.

12349—12354. Two skulls of Indians and other human bones, bone implement and animal bones from shellheap on Great Deer Isle, Maine.—Collected and presented by Mr. MANLY HARDY, Brewer, Maine.

12355—12359. Photographs of arrowheads and bowls of stone from N. America, and of Indian picture writing, or rock inscriptions at Bel-lows Falls and Brattleboro.—Presented by Prof. E. HITCHCOCK, Amherst, Mass.

12360—12388. Collection of typical pottery from the mounds in south-eastern Missouri.—By PURCHASE.

12389. Native copper from the Calumet and Hecla Mine, Lake Superior.—Presented by Mr. ALEXANDER AGASSIZ, of Cambridge.

12390—12796. A collection from the fresh-water shellheaps and mounds of Florida. This collection is of special interest as it is that upon which is based Professor J. WYMAN's important memoir upon the "Fresh-water Shellheaps of the St. John's River," to which the reader is referred. It was made almost entirely by himself during his visits to Florida in the years 1869-1875; and at the time of his death he was engaged in preparing it for entry in the catalogue of the Museum.

12797—12825. Crania and human bones; shell and stone implements; earthen jars and vases from graves on T. F. Wilkinson's farm near Nashville, Tennessee.—Collected by Mr. E. CURTISS in continuation of the explorations conducted for the Museum by the Curator.

12826. Flint dagger 234 mm. long from a stone grave in a burial mound on Mr. T. F. Wilkinson's farm on Mill Creek, nine miles from Nashville, Tenn.—Collected and presented by Mr. JOHN B. EDMONSON, Nashville.

12827—12861. Rude stone implements from the gravel; stone arrowheads, spearpoints, knives, scrapers, celts, grooved stone axes, and round and oval hammerstones from the surface; perforated stone ornaments, human face carved on stone and fragments of pottery, from the surface near Trenton, New Jersey.—Explorations of Dr. C. C. ABBOTT conducted for the Museum.

12862. Rude stone implements from a cave near Beirut, Syria.—Collected and presented by the Rev. SELAH MERRILL, Andover, Mass.

12863. Human face in pottery from Guayaquil.—Collected and presented by Mr. S. W. GARMAN, Cambridge.

12864. Three photographs of Pelew Islanders.—Presented by Prof. CARL SEMPER, Wurtzburg, Germany.

12865. Three photographs of palæolithic implements.—Presented by Mr. R. P. GREG of Coles, Buntingford, Herts, England.

12866. Ten photographs of the Chinese Department in the Centennial Exhibition at Philadelphia.—Presented by Hon. FRANCIS P. KNIGHT, of the Chinese Commission, Pekin.

12867. Figure of grotesque animal from a temple outside of Pekin.—Collected by Hon. FRANCIS P. KNIGHT, of Pekin, and presented by Mr. THOMAS G. CARY, Cambridge.

12868. Fragment of an Indian belt, ornamented with copper, from a grave at Harpswell, Maine.—Collected and presented by Dr. E. PALMER.

12869. Double stone mortar from Taunton, Mass.—Collected by Dr. A. WOOD of that place, and presented by Prof. J. B. S. JACKSON, Boston.

12870. Earthen cup, from a grave on Mr. T. F. WILKINSON's farm near Nashville, Tenn.—Collected by Mr. E. CURTISS, in continuation of explorations for the Museum, conducted by the Curator.

12871. Five photographs of skulls found in a mound near Urbana, Ohio.—Collected and presented by THOMAS F. MOSES, Cor. Sec. of the Central Ohio Scientific Association.

12872—12878. Stone arrowheads, knives, spearpoints, and rude implements, also a broken stone celt from Lancaster County, Pennsylvania, collected by Mr. EDWARD HULSE.—Presented by Dr. C. C. ABBOTT, Trenton, N. J.

12879—12888. Fragments of pottery, stone knives, drills, arrowheads and spearpoints from the banks of Tar River, N. C.—Collected and presented by Mr. W. R. CABOT, Brookline, Mass.

12889. Shell beads (*Olivella biplicata*) from California.—Collected by Rev. S. BOWERS, and presented by Mr. E. A. BARBER, West Chester, Pa.

12890—12894. Casts of human heads carved in stone, from Ohio and Greenup County, Kentucky; of a grooved axe from West Virginia; of a biconcave stone, from Indiana and of a perforated and carved cylindrical stone, found near Maysville, Ky.—Presented by Dr. H. H. HILL, of Cincinnati, Ohio.

12895—12944. A collection of earthen jars, vases, cups, bottles, etc., from the mounds and burial places in southeastern Missouri; also three specimens of similar workmanship from northeastern Arkansas.—By PURCHASE.

12945—13003. Tobacco from Japan, collected by Commodore PERRY; fruits, vegetables, seeds, etc., used as food or medicine, or worn as ornaments by the Indians in Southern Utah, California, New Mexico, Alaska and the Plains.—Collected by Major J. W. POWELL, Dr. E. PALMER, Governor ARNY, General EWING, Mr. V. COLYER, Mr. L. STONE, Rev. S. BOWERS, Mr. J. G. SWAN and Mr. J. B. MENTEITH.—Presented by the SMITHSONIAN INSTITUTION.

13004—13012. Stone spearpoints, a slinker, celt, gouge and arrowheads of stone from Lynn and Ipswich, Mass., and a perforated stone implement from the latter place.—By PURCHASE.

13013. Earthen tazza from near Cumæ, Italy.—Presented by Dr. IGNAZIO CERI, Capri, Italy.

13014. Skull and lower jaw, the former showing bullet holes, from Tennessee.—By PURCHASE.

13015—13033. Bones of animals, implements of teeth and horn, and fragments of pottery, plain, cord marked, incised and punched and two specimens colored with cinnabar, from a shellheap in Japan.—Collected by Prof. E. S. MORSE AND PARTY and presented by the IMPERIAL UNIVERSITY OF TOKIO.

13034. Malay dagger.—Collected by Capt. CHARLES S. HUNTINGTON and presented by HENRY W. DANIELL, Esq., Boston.

13035. Cast of a carving in stone representing a combination of an animal and human head and a beetle, from the original found near Canajoharie, New York.—Presented by Mr. A. G. RICHMOND of that place.

13036. Cast of a "Phallus" found in a mound on Clinch River, East Tennessee.—Presented by R. S. ROBERTSON, Esq., Fort Wayne, Ind.

13037—13115. A collection from an ancient cemetery on the Bay of Chacota, one and a half miles south of Arica, Peru, consisting of several "mummies," and the articles found buried with them. This collection was made in 1836 by Mr. JOHN H. BLAKE, of Boston, Mass., and is elsewhere described in a special report by that gentleman.—Presented by JOHN H. BLAKE, Esq., Boston.

13116—13565. A number of human skeletons and a large and valuable collection of implements and ornaments of stone, bone and shell, of native manufacture; also glass beads of different patterns, and implements and ornaments of iron, brass, etc., evidently obtained from Europeans; all from burial places on the Islands of San Clemente and Santa Catalina, off the southern coast of California.—Explorations of Mr. PAUL SCHUMACHER, conducted for the Museum.

13566—13847. A similar collection from the Santa Barbara Islands and the main land, made by Messrs. SCHUMACHER and BOWERS, and also by Lt. WHEELER's party.—Partly in connection with the joint explorations conducted for the Museum and the Smithsonian Institutions. Received from the SMITHSONIAN INSTITUTION.

13848—13910. Plaster casts of the heads of sixty-three Indian and Mexican captives, made by Mr. CLARK MILLS for the Museum in connection with the Smithsonian Institution.

13911—13930. Arrowheads, mullers, hammerstones, gouges, axes, celts, and plummet-shaped implements of stone, and fragments of pottery from Ohio; a carved stone, and fragments of pottery representing human faces from near Evansville, Indiana (the "Unsicker" collection).—Presented by the late Prof. JEFFRIES WYMAN.

13931—13935. Paper money, copper, silver and tin coins, used by the Russians in Alaska.—By PURCHASE.

Additions to the Library.

From the Hon. Robert C. Winthrop. Popular Science Monthly from May, 1872, to April, 1874. 4 vols., 8vo. North American Stone Implements, and Ancient Aboriginal Trade in North America. 2 pamphlets, 8vo, by Charles Rau. Mémoires de la Société Royale des Antiquaires du Nord. Nouvelle série, 1875—1876. 1 vol., 8vo. Aarbøger for Nordisk old kydighed og Historie, udgivne af det Kongelige Nordiske Oldskrift-selskab. Parts 1, 2, 3, 4, of 1875, and 1, 2, 3, 4, of 1876. Two vols., 8vo.

From the Author. Increase Allen Lapham—a Memorial read before the Wisconsin Natural History Society, by Charles Mann. Pamphlet, 8vo, 21 pp.

From the Academy of Natural Sciences, Davenport, Iowa. Lithographic copies of engraved stones, known as "the Gass Tablets," with an account of the circumstances under which the originals were found in a mound near Davenport, Iowa.

From the Society. Sitzungsberichte der Alterthumsgesellschaft Prussia Zu Königsberg in Pr. for the years 1874-1875 and 1875-1876. 2 pamphlets, 12mo. Preussische Steingeräthe auf fünf Tafeln photographirt von Hermann Prothman, als Beitrag Zur Archäologie Altpreussens herausgegeben und erläutert von Dr. Georg Bujack Z. Z. vorsitzender der Prussia. Pamphlet, 11 pp., 8vo, with 5 plates.

From the Author. Prehistoric Wisconsin, and the Westphalian Medal—1648, by Prof. James D. Butler. Pamphlet, 8vo, 31 pp.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool, during the sixty-fifth session, 1875-76, No. XXX. 1 vol. 8vo, pp. 302. London and Liverpool, 1876.

From the Museum. Noticia Historico-descriptiva del Museo Arqueológico Nacional publicada siendo director del Mismo El excmo. señor Don Antonio García Gutierrez. Madrid, 1876. 1 vol., 8vo, pp. 210.

From Gen'l A. A. Humphrey, Chief of Engineers, U. S. Army. Annual Report upon the Geographical Surveys west of the one hundredth Meridian, in California, Nevada, Utah, etc., etc., by George M. Wheeler, First Lieutenant of Engineers, U. S. Army. 1 vol., 8vo, pp. 355. Washington, 1876.

From the Department of the Interior. Invertebrate Fossils by F. B. Meek,

and Geometrid Moths by A. S. Packard, being Vols. IX and X of the United States Geological Survey of the Territories, F. V. Hayden, Geologist in charge. 2 vols., 4to, Washington, 1876. Bulletin of the United States Geological and Geographical Survey of the Territories. Vol. III, Nos. 1 and 2. Bulletin No. 1 of the United States Entomological Commission, "Destruction of the Young or unfledged Locusts."

From the Society. Archivio per l'Antropologia e la Etnologia, organo della Società Italiana di Antropologia e di Etnologia pubblicato dal Dott. Paolo Mantegazza, Professore ordinario di Antropologia Nel R. Istituto Superiore in Firenze. Fascicoli 3 and 4, Vol. VI, and Fascicoli 1, 2, 3 and 4, Vol. VII.

From the Author. The Report of the Council of the American Antiquarian Society, made Oct. 21st, 1875, at Worcester; Proceedings of the Centennial Celebration, at Groton, Mass. 2 pamphlets, 8vo, by Samuel A. Green, M. D.

From Dr. Samuel A. Green. Report of a Medical Commission on the Sanitary Condition of Boston. Pamphlet, 8vo, 199 pp., Boston, 1875.

From the Author. Stone Age of New Jersey, by Charles C. Abbott, M.D., Trenton, N. J. 1 vol., 8vo, 144 pp., with plates.

From the Author. Researches in Prehistoric and Protohistoric Comparative Philology, Mythology and Archæology, in connection with the Origin of Culture in America and the Accad or Sumerian Families, by Hyde Clarke. Pamphlet, 8vo, pp. 74. London, 1875.

From the Museum. Seventh Annual Report of the Trustees of the Metropolitan Museum of Art, New York, 1877. Pamphlet, 8vo, 47 pp.

From the Society. Beiträge Zur Anthropologie und Urgeschichte Bayerns, organ der Münchener Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. 1 Band, 1, 2, 3 ur 4 Heft. München, 1876-1877.

From Dr. John Dixwell of Boston. Découverte d'un Squelette humain de L'Époque paléolithique dans les cavernes des Baoussé-Roussé dites Grottes de Menton par Émile Rivière. Paris, 1875. Pamphlet, 4to, pp. 64, photographic plates.

From the Author. The Rockford Tablet, by J. D. Moody, Mendota, Ill. Pamphlet, 8vo, pp. 5.

From the Author. Fugitive Essays, by Col. Charles Whittlesey, of Cleveland, Ohio. 40 pamphlets, 8vo.

From Colonel Charles Whittlesey. History of the 20th Ohio N. V. Infantry, from 1861 to 1865, by D. W. Wood. Mount Vernon, Ohio. Pamphlet, 8vo, 70 pp. Tracts 1 to 36, read before the Western Reserve and Northern Ohio Historical Society, 1870-1877. 1 vol., 8 vo. Proceedings of the Cleveland Academy of Natural Science, 1845 to 1859. 1 vol., 8vo, pp. 295. Published by a gentleman of Cleveland, 1874.

From Count L. F. Pourtales. Catalogo N. 1. Raccolta degli Oggetti de così detti tempi preistorici compilato da Igino Cocchi. Firenze, 1872. Pamphlet, 8vo, pp. 102, with IX Lithographic Plates.

From the Author. On some Fragments of Pottery from Vermont, by George H. Perkins. Pamphlet, 8vo, pp. 11.

From the Museum. Verzeichniss der im Museum Godeffroy vorhandenen Ethnographischen Gegenstände. Pamphlet, 29 pp., 8vo. Hamburg, Sept., 1876.

From Charles H. Hart, Esq. Proceedings of the Numismatic and Antiquarian Society of Philadelphia, from May, 1865, to Dec., 1866. Pamphlet, 8vo, pp. 160.

From the Smithsonian Institution. Annual Report for the year 1876. 1 vol., 8vo, pp. 488. Exploration of the Aboriginal Remains of Tennessee, by Joseph Jones. 1 vol., 4to, pp. 171. Archæological Collection of the United States National Museum in charge of the Smithsonian Institution, by Charles Rau. 1 vol., 4to, pp. 104. List of Publications of the Smithsonian Institution. Pamphlet, 8vo, pp. 64. Washington, 1877. The Moundbuilders and Platycnemism in Michigan, reprinted from the Smithsonian Report for 1873; and certain characteristics pertaining to Ancient Man in Michigan, reprinted from Smithsonian Report for 1875. Two pamphlets, 8vo, by Henry Gillman.

From Samuel L. Boardman, Sec. Board of Agriculture, State of Maine. Reports 1875-1877. 2 vols., 8vo.

From the Author. Notes on Crania of the Botans of Formosa, and the Arrow poison of the Ainos. 2 pamphlets, 8vo, by Stuart Eldridge, M. D.

From the Trustees. Proceedings of the Trustees of the Peabody Education Fund at their annual Meeting in New York, Oct. 8d, 1877. Pamphlet, 8vo, 59 pp.

From the Author. Jesuit Missions among the Cayugas. 1656-1684, by Rev. Charles Hawley. Pamphlet, 8vo, 42 pp.

From Signor Nicolucci. Catalogo della Collezione di Oggetti preistorici dell' eta della Pietra posseduti da Giustiniano Nicolucci in Isola del Liri. Pamphlet, 8vo, 42 pp.

From Dr. C. C. Abbott. Trenton, N. Jersey. Annual Report of the State Geologist of New Jersey, for the year 1877. Pamphlet, 8vo, 55 pp.

From the Society. Archiv des Vereins für Geschichte und Alterthümer der Herzogthümer Bremen und Verden und des Landes Hadeln zu Stade. 1 vol., 8vo, pp. 522.

From the Author. Discovery of Stone Implements in Glacial Drift in North America, by Thomas Belt. London, 1878. Pamphlet, 8vo, pp. 22.

From the Author. The Mayas. Discoveries in Yucatan, by Stephen Salisbury, Jr. 1 vol., 8vo, pp. 103. Privately printed.

From the Author. Notice of an interesting relic of Mexican Sculpture, by F. W. Putnam. Pamphlet.

From the Society. Baltische Studien, herausgegeben von der Gesellschaft für Pommersche Geschichte und Alterthumskunde Stettin 1877. 1 vol., 8 vo, pp. 103.

By Purchase. Lectures on Man, by Carl Vogt. 1 vol., 8vo, pp. 469. London, 1864. Memoirs read before the Anthropological Society of London, 1863-1869. 3 vols., 8vo. Parts 1, 2, and 3, Vol. I; No. 1 of Vol. III; No. 1 of Vol. IV; No. 3 of Vol. V, and No. 3 of Vol. VI, of the Journal of the Anthropological Institute of Great Britain and Ireland. Towns-

end's Narrative. 1 vol., 8vo, pp. 352. Philadelphia, 1839. Trumbull's Indian Wars. 1 vol., 8vo, pp. 320. Boston, 1846. Wabtoyah and the Taos Trail, by Lewis H. Garrard. 1 vol., 8vo, pp. 349. Cincinnati, 1850. Belden, the White Chief. Edited by Gen. James S. Brisbin, U. S. A. 1 vol., 8vo, pp. 513. Cincinnati and New York, 1870. Pacific and Dead Sea Expeditions, Wilkes, Lynch, etc., by J. S. Jenkins. 1 vol., 8vo, pp. 517. Rochester, N. Y., 1856. A canoe voyage up the Minnuy Sotor, by G. W. Featherstonhaugh. 2 vols., 8vo. London, 1847. Bible for the benefit of the Penobscot, Micmac and other Indians, by Rev. Eugène Vetromile. 1 vol., 12mo, pp. 571. New York, 1860. Report of the Department of Agriculture for 1870. 1 vol., 8vo, pp. 688. Cherokee Almanac for 1856. Pamphlet, 8vo, 36 pp. Temperance address, in Cherokee, by George Lowry, 2d Chief of that nation. Pamphlet, 12mo, 16 pp. 1855. Laws of the Cherokee Nation adopted by the Council at various periods. Pamphlet, 8vo. Tahlequah, 1855. Atala, by M. de Chateaubriand. 1 vol., 12mo, pp. 144. New York, 1818. Ancient Society, by Lewis H. Morgan. 1 vol., 8vo, pp. 560. New York, 1877. Peru, Incidents of Travel and Exploration in the land of the Incas, by E. Geo. Squier. 1 vol., 8vo, pp. 599. New York, 1877. American Antiquities and Discoveries in the West, by Josiah Priest. 1 vol., 8vo, pp. 400. Albany, N. Y., 1838. The Habitations of Man in all Ages, by Viollet Le-Duc; translated by Benjamin Bucknall. Boston, 1876. 1 vol., 8vo, pp. 394. History of the Ceramic Art, by Albert Jacquemart; translated by Mrs. Bury Palliser. 1 vol. 8vo, 627 pp. London, 1873. Ancient Faiths and Modern, by T. Inman, M. D. One volume, 8vo, pp. 478. New York and London, 1876.

MEASUREMENTS OF THE CRANIA RECEIVED
DURING THE YEAR.¹

No. 11,249. Cranium of an Indian. Adult, probably a male. Capacity 1,435.² Length 186. Breadth 133. Height 139. Width of Frontal, 92.³ Index of breadth .715. From a grave near Peters Falls, West Andover, Mass.—By PURCHASE.

No. 11,252. Cranium, imperfect. Adult, probably a male. Length 185. Breadth 136. Height 161. Index of breadth .735. Index of height .870.

Particular attention is called to the height of this skull and the development of the base of the occiput, as it is a case in which the index of height fails to give anything like a correct idea of its form. To appreciate this thoroughly, its height should be compared with its width and not with its length, or should be taken absolutely without any reference to the other dimensions. In this latter respect we find that it exceeds anything received during the year. The nearest approach to it is in No. 11,857 from Tennessee, which is 152^{mm} high. From a mound near Lynxville, Wis.—Collected by Judge SAMUEL MURDOCK and presented by Prof. B. W. PUTNAM, Jamaica Plains.

No. 11,452. Cranium of a Yankton Sioux Indian. Adult male. Capacity 1,480. Length 176. Breadth 140. Height 139. Width of Frontal 96. Index of breadth .801.—Presented by the ARMY MEDICAL MUSEUM, Washington.

No. 11,814. Cranium of a Comanche Indian. Youth. Capacity 1,510. Length 178. Breadth 143. Height 132. Width of Frontal 96. Index of breadth .826.—Presented by Dr. T. O. SUMMERS, Nashville, Tenn.

No. 12 241. Calvarium, imperfect. Probably a male. Length 174. Breadth 150. Height 124. Width of Frontal 96. Index of breadth .862. Index of height .712. Several small Wormian bones in the lambdoidal suture. Contrast this skull with No. 11.252 and it will be seen that in height and breadth it is at the other extreme. In that the height exceeds the breadth by 25^{mm}, whilst in this, it is 26^{mm} less. Considered by itself, however, neither of the measurements in this skull is excessive, as we find crania from California that are lower, and others from Tennessee

¹ The measurements of the crania here recorded were taken by Miss JENNIE SMITH and Mr. LUCIEN CARR, JR., assistants in the Museum.

² Capacity in cubic centimetres; other measurements in millimetres. Index of breadth or height is in thousandths of the long diameter.

³ This measurement is taken so as to give the least width of frontal, between the temporal ridges, and not that of its greatest width, which is approximately covered by the width of the skull measured through the parietals.

that approach it closely in breadth. It is of interest to note that both of these skulls are from mounds. From a mound in Utah.—Exploration of Dr. E. PALMER conducted for the Museum.

No. 12,248. Cranium of a modern young Pah Ute woman. Capacity 1,046. Length 166. Breadth 124. Height 123. Width of Frontal 87. Index of breadth .746. Index of height .740. Twenty-four distinctly marked Wormian bones in the lambdoidal suture. From Utah.—Exploration of Dr. E. PALMER conducted for the Museum.

No. 12,349. Cranium of an Indian. Adult male. Capacity 1,375. Length 187. Breadth 140. Height 139. Width of Frontal 94. Index of breadth .748. Index of height .743. From a shellheap on Great Deer Isle, Maine.—Collected and presented by Mr. M. HARDY, Brewer, Maine.

No. 12,350. Cranium of an Indian. Adult female. Capacity 1,182. Length 174. Breadth 132. Height 126. Width of Frontal 95. Index of breadth .758. Index of height .724. From a shellheap on Great Deer Isle, Maine.—Collected and presented by Mr. MANLY HARDY, Brewer.

No. 13,014. Cranium of an Indian, imperfect. Adult male. Length 157. Breadth 142. Width of Frontal 91. Index of breadth .904. Frontal much depressed. Parieto-occipital portion slightly flattened. Right half of the coronal suture closed. Several Wormian bones developed in the lambdoidal suture. Perforated in several places by buck shot. Found under a pile of stones on Moccasin Point near Chattanooga, Tenn.—By PURCHASE.

The tables following, give comparative measurements of the two most important collections of crania received during the year, and are of interest as showing the marked difference between the Indians of the coast of California, and the ancient peoples of the south-western states.

The first table is derived from the collection made for the Museum, at the Santa Barbara Islands, by Mr. Paul Schumacher.

The second table contains the measurements of sixty-seven Crania from the stone-graves of the moundbuilders of Tennessee, and were either collected in person by the Curator, or by Mr. E. Curtiss, who continued the exploration under his direction. This important series of Crania is, further on, discussed, at length, by Mr. Carr.

FIFTY CRANIA FROM THE SANTA BARBARA ISLANDS, CALIFORNIA.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	
13 546	39*	50*	49*	49*	47*	49*		San Clemente.
13 547	1259	176	132	128	.750	.727	88	"
13 548	1243	179	137	125	.745	.697	92	"
13 549	1242	184	133	132	.722	.717	89	"
13 550	1348	190	139	132	.751	.694	95	"
13 551	1677	193	145	133	.751	.689	102	"
13 552	1320	182	141	130	.774	.708	94	"
13 553	.....	178	....	124	....	.694	88	"
13 554	1212	178	136	122	.758	.685	94	"
13 555	1237	182	138	125	.758	.688	90	"
13 557	.....	164	109	....	.646	....	83	"
13 558	1445	194	140	133	.721	.685	94	"
13 560	1469	190	135	134	.710	.705	97	"
13 561	.....	190	140	....	.736	....	89	"
13 562	1383	184	131	130	.739	.708	91	"
13 563	.....	174	132	127	.758	.729	91	"
13 564	1295	179	138	130	.770	.727	95	"
13 565	1346	186	139	129	.747	.693	92	"
13 566	1015	170	122	119	.717	.700	91	Santa Catalina.
13 567	1388	192	140	133	.677	.692	98	"
13 568	.....	194	130	126	.670	.649	94	"
13 569	1347	181	137	134	.756	.740	95	"
13 570	.....	191	138	132	.722	.691	95	"
13 571	1254	180	124	133	.688	.738	90	"
13 572	1035	176	124	116	.704	.659	83	"
13 573	1355	192	132	129	.687	.671	97	"
13 574	.....	182	136	124	.747	.681	92	"
13 575	1345	189	132	121	.698	.656	96	"
13 576	1448	186	135	129	.725	.693	99	"
13 577	1347	187	135	125	.721	.668	92	"
13 578	.....	179	134	118	.748	.659	91	"
13 579	1497	192	137	134	.713	.697	100	"
13 580	1250	185	133	129	.718	.697	95	"
13 581	1320	192	139	123	.723	.640	92	"
13 582	.....	187	130	129	.694	.689	96	"
13 583	1320	182	135	132	.741	.725	93	"
13 584	.....	194	127	....	.654	....	95	"
13 585	1680	195	137	139	.702	.712	96	"
13 586	.....	184	124	123	.673	.668	....	"
13 587	1459	192	138	130	.718	.677	92	"
13 588	1545	189	137	139	.724	.735	95	"
13 589	1311	178	133	124	.747	.696	90	"
13 590	1292	192	139	129	.723	.671	96	"
13 591	1196	173	132	116	.763	.670	91	"
13 592	1467	194	137	134	.708	.690	105	"
13 593	1086	184	127	125	.690	.679	92	"
13 594	1352	191	134	131	.701	.685	95	"
13 595	1210	179	137	129	.764	.739	91	"
13 596	1310	183	135	136	.737	.743	94	"
13 597	1175	181	132	128	.729	.707	94	"
13 598	1157	183	132	120	.721	.704	97	"
Maximum.	1680	195	145	139			105	
Mean.	1326	184	133	128	.723	.680	93	
Minimum.	1015	164	107	116			83	
Range.	665	81	39	23			22	

* These figures refer to the number of Crania measured.

SIXTY-SEVEN CRANIA FROM TENNESSEE.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Sex.	
	30* 67* 64* 40*						67*		
11.815	....	180	147	....	.816	....	90	....	Stone grave near Nashville, Tenn.
11.824	....	137	169	....	1.233	....	90	....	" " " " " "
12.205	1479	158	155	148	.981	.986	96	M	" " " " " "
12.238	....	170	130	....	.764	....	84	....	" " " " " "
12.290	....	158	137	....	.867	....	87	....	" " " " " "
11.918	1275	173	134	137	.774	.791	89	F?	Found in Mound between two stone graves.
11.834	....	168	145	....	.863	....	92	....	Stone grave near Nashville.
11.854	....	166	132	....	.795	....	88	....	in Mound near Nashville.
11.857	1500	187	146	152	.780	.812	97	M	" " " " " "
11.860	....	182	130	139	.714	.763	95	....	" " " " " "
11.890	....	163	142	....	.871	....	91	....	" " " " " "
11.861	....	160	....	140	....	.875	86	....	" " " " " "
11.864	1295	161	143	135	.888	.838	89	F	" " " " " "
11.865	1414	190	133	152	.700	.800	93	M	" " " " " "
11.881	....	170	....	141	....	.829	88	....	" " " " " "
11.882	....	171	....	144	....	.842	87	....	" " " " " "
11.889	1387	168	138	148	.821	.880	90	F?	" " " " " "
11.891	....	180	141	....	.783	....	90	....	" " " " " "
11.919	1268	172	128	138	.744	.802	92	F	" " " " " "
11.921	....	168	142	....	.845	....	87	....	" " " " " "
11.937	....	150	137	....	.721	....	93	....	" " " " " "
11.941	....	167	130	....	.778	....	88	....	" " " " " "
11.948	....	167	132	....	.790	....	101	....	" " " " " "
11.969	....	170	135	140	.794	.823	87	....	" " " " " "
11.970	....	168	134	138	.797	.821	88	....	" " " " " "
11.972	....	167	128	142	.761	.850	90	....	" " " " " "
11.973	....	159	139	144	.874	.905	92	....	" " " " " "
11.974	....	174	133	....	.764	....	87	....	" " " " " "
12.004	....	184	134	....	.728	....	97	....	" " " " " "
12.015	1275	162	148	138	.913	.851	94	F	" " " " " "
12.022	1487	184	150	146	.815	.793	96	M	" " " " " "
12.027	1237	178	128	136	.719	.764	93	F	" " " " " "
12.303	....	189	143	....	.756	....	91	....	near Nashville.
12.306	....	160	143	150	.893	.937	99	....	" " " " " "
12.308	....	157	138	....	.878	....	82	....	" " " " " "
12.309	1275	164	144	138	.878	.841	90	M	" " " " " "
12.310	1181	158	134	137	.841	.867	88	F	" " " " " "
12.312	....	160	144	142	.900	.887	91	....	" " " " " "
12.322	1129	162	127	136	.783	.839	86	F	" " " " " "
12.323	1552	177	140	145	.790	.819	96	M	" " " " " "
12.797	1825	167	160	....	1.012	....	102	M	" " " " " "
12.798	....	153	147	....	.960	....	84	....	" " " " " "
12.799	....	157	154	151	.989	.961	93	....	" " " " " "
12.800	....	160	151	....	.943	....	97	....	" " " " " "
12.802	1528	158	157	146	.903	.924	98	M	" " " " " "
12.803	....	173	146	....	.843	....	96	....	" " " " " "
12.804	....	149	140	....	.939	....	85	....	" " " " " "
13.981	1178	163	132	144	.809	.883	85	F	near Nashville.
14.000	....	172	151	145	.877	.843	96	....	" " " " " "
14.001	1144	162	137	....	.845	....	91	F	" " " " " "
14.002	1427	169	145	144	.857	.852	92	M	" " " " " "
14.003	1368	151	154	....	1.019	....	90	F	" " " " " "
14.004	1452	162	146	146	.901	.901	96	M	" " " " " "
14.005	1303	160	145	141	.906	.881	90	F	" " " " " "
14.006	1341	172	140	145	.813	.843	92	M	" " " " " "
14.039	1084	162	136	139	.839	.858	92	F	in Mound
14.040	....	168	138	....	.821	....	94	....	" " " " " "
14.091	1306	161	142	140	.881	.860	86	F	" " " " " "
14.092	....	156	151	....	.967	....	93	....	" " " " " "
14.093	....	161	153	148	.950	.919	96	....	" " " " " "
14.094	....	158	136	....	.860	....	89	....	" " " " " "
14.095	1829	160	141	139	.881	.868	89	F	" " " " " "
14.096	....	171	150	....	.877	....	95	....	" " " " " "
14.097	1358	178	136	140	.764	.786	90	M	" " " " " "
14.098	1262	156	140	140	.897	.897	86	F	" " " " " "
14.099	1341	169	148	144	.875	.852	92	M	" " " " " "
14.100	1303	161	140	140	.869	.869	92	F	" " " " " "
Max.	1825	190	169	152	....	....	102	....
Mean.	1341	166	141	142	.852	.854	91	....
Min.	1084	137	127	136	....	....	82	....
Range.	741	83	42	16	....	....	20	....

* These figures refer to the number of Crania measured.

PALEOLITHIC IMPLEMENTS FROM
IN THE VALLEY OF THE DELA-
WARE TRENTON, NEW JERSEY.

FARLES C. ABBOTT, M.D.

ous report, given you the details of such
- enabled to make, extending over a consid-
- present year; this, my second communica-
- continuance of the series of examinations of
- localities, to the close of the year — my later
- repetition of that of the past season, but with
- results.

- necessary, to avoid all obscurity of statement,
- tly, to the previous report, it is not to materially
- ly re-call any statement there made. Every addi-
- tained during the past summer and autumn, only
- believe, the opinion there expressed, that we have, in
- fashioned instruments there described, considered with
- of their surroundings, an unquestionable trace of inter-
- along the Atlantic coast of America.

- earlier report, brief mention only, was made of many
- ing features connected with the characteristic implements
- the gravel deposits, and of the deposits themselves; which
- now able, after more systematic exploration, and the dis-
- of a large number of additional specimens, to enter upon
- considerable detail; and without unnecessary repetition — so
- as my earlier communication covers this subject — shall en-
- deavor to demonstrate conclusively the artificial origin of the
- specimens of chipped pebbles discovered; to determine the geo-
- logical age of the deposit of gravel in which they lie embedded;
- to indicate the co-equal age of the deposit and the paleolithic im-
- plements it contains, and finally, endeavor to point out the prob-
- able racial belongings of the people that made and used these
- rudest forms of implements of stone.

Although the more specialized forms of implements since found, clearly bespeak the human origin of all, I have thought it best, to refer again, in some detail, to the many indications that the chipped pebbles, or rude stone implements, that occur in these gravel deposits, have been artificially produced. The more marked features of these specimens have already been pointed out; and although they are but little above the ordinary refuse of a modern quarry, and often quite closely reproduced by the stone breaker, when fracturing rock for road-bed with a hammer, it must be borne in mind that these are artificial forces operating on the stone; and further, this absence of careful workmanship is not wanting in the more recent productions of the Indians; and from graves of the aborigines in Massachusetts, from the stone graves in Tennessee, as well as from surface "finds" in Missouri, are several specimens — now in the Peabody Museum — which are in all respects, except the mineral used, identical with the more specialized examples from the Delaware River gravels.

There is, in all the specimens that I have collected, a considerable amount of weathering of their surfaces, the degree of which, varies but slightly in the whole series, except where other mineral than argillite occurs; when the alteration of the surface is much less; as in a very characteristic pointed pebble of quartzite, which is quite unchanged. It has been suggested that these chipped surfaces might have been produced by frost action, and the specimens of supposed implements therefore, only productions of nature. Given a single fractured surface, which a sudden blow, or the ordinary action of frost, might readily produce, and no reference to any other productive agency is required; but when we consider that instead of one, there are twenty or forty planes of cleavage, all equally weathered, and collectively an implement, as we call their unquestioned neolithic counterparts, has been produced, and we fail to see how nature, by any known or imaginable force, could so fashion either an oval pebble or angular fragment of rock.

In my previous report, it will be noticed that of the three specimens figured, as found in the underlying gravels, one is of flint, and found nearer the surface, than the larger argillite implements, from greater depths. The fact that the former was at a depth that exceptional circumstances might inhume ordinary Indian relics, and being of a different mineral than the characteristic forms

of the gravel, might lead one to believe that this more artistically chipped flint spear-shaped implement, was an "intrusive" relic of Indian origin. The general character of this gravel-bed, even at this shallow depth—six feet from the surface—where this flint specimen occurred, was such as to convince me, at the time, that the specimen had not gotten there subsequently to the deposition of the gravel itself. I fortunately had, at the time, an exceptionally good opportunity of examining the locality, and was satisfied that the gravel here reached the surface, as is quite frequently the case, throughout the whole area of southern New Jersey. Boulders of large size were upon the surface, and the side of the excavation from which I extracted the specimen showed by the close packing of the pebbles of every size, constituting the mass, that it was not a reassorted, but an undisturbed glacial deposit. Immediately above it, *i.e.*, on the same horizon, but not directly over it, and continuously to the surface were numbers of large stones, several of them containing from six to ten cubic feet. In such a mass, and at such a depth, it is scarcely possible a spear-point of the later Indians could have reached. The fact that the specimen is flint, and not argillite, has no bearing on the question of its being other than a paleolithic implement, inasmuch as in all well known localities in Europe, where paleolithic flints occur, there have been found occasional specimens made of other minerals. In the Clement collection, in the Peabody Museum, there is one such specimen that is, in all respects, identical with many from the gravel deposits of central New Jersey. As already mentioned, other examples of rude implements, not of argillite, have been collected, which are less elaborately wrought, but evidently designedly fashioned. Furthermore, many more specialized forms have been found, four of which are here figured.

Before closing the subject of the evidently artificial character of these rude implements of stone, it may be well, also, to call attention to many specimens of "chipped pebbles" which cannot be considered as implements, inasmuch as there is no trace of design in their present shapes. They are, indeed, chipped over the greater portion of their surface, but have no well defined point or cutting edges. These irregularly chipped masses, usually of smaller size than finished implements, bear no evidence of being crushed, although glacial action probably exposes fragments of rock or ice-encased pebbles more to such crushing force, than to

any other, except the rubbing against denser mineral, that results in deeply incised striæ,—the so-called glacial scratches. The lithological character of argillite is such, that a given mass of this mineral, if exposed to a crushing force, will not fracture in such a way, as to resemble in any degree, a chipped pebble, such as are here referred to. When associated with the finished forms, and the same general character of weathering and of chipping is noticed on both, one cannot but consider them as identical, in origin, and I have, myself, no hesitation in classing such designless forms, principally as broken specimens, others as “failures,” and in some instances as refuse chips; being in all respects the same forms that we find are so characteristic of the localities where neolithic implements of chert and jasper have been made.

The results of my collecting having been partially anticipated in the preceding pages, I will only remark that the number of highly finished implements is quite large, and that one of the effects of a remarkably violent storm, to which I shall again refer as having a somewhat important bearing upon the question of the age and origin of drift implements, was to expose an entirely new surface on the several bluffs where I have been accustomed to find these rude forms of chipped implements, both in place and in the loose material at the bases of them. From both positions, I have, in all, gathered about sixty specimens.¹

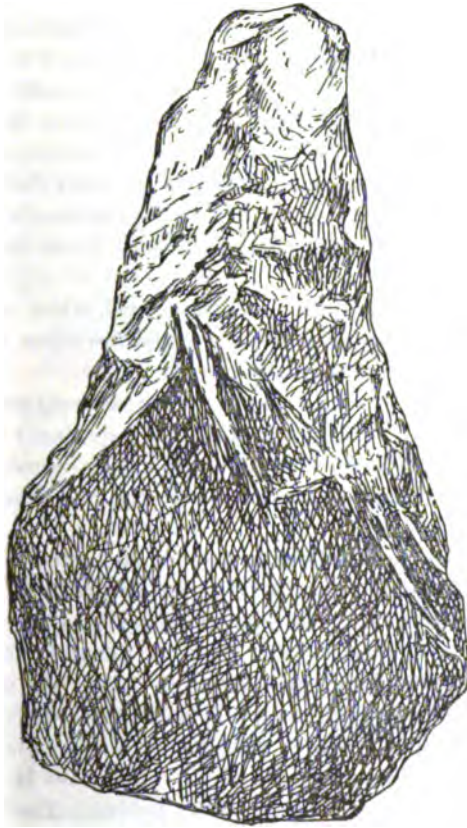
The general character of most of these is much the same as of those described in my previous report; but several have been met with which present certain peculiarities, the more interesting from the fact that they clearly demonstrate, I think, the artificial origin of them all.

Among the specimens of this character, to which I desire to call particular attention, are two, one of which is here figured. The other, not engraved, is a large, originally oval water-worn pebble, that has been carefully chipped at one end, and then discarded,

¹The relative abundance of these implements is perhaps a matter of some importance, in its bearing on the question of their origin. Were they natural forms, the peculiar force that operated to produce them, so marvellously like ordinary Indian relics as many of them are, would scarcely have been limited to so few pebbles as in this case; unless future exploration shall discover at some distant point a locality where only chipped pebbles occur. I have made an effort to estimate the comparative abundance of these paleolithic implements in the gravel deposit forming the bluff, eastern bank of the Delaware river, and as near as I can determine, it is about one ten-thousandth of one per cent, or one in every million of pebbles. There certainly, as yet, has not been gathered enough of them, to materially affect this calculation.

in consequence, I judge, of an unsatisfactory fracture occurring which prevented fashioning an implement of the desired size. We have, in this instance, an excellent example of an unfinished paleolithic implement, showing the method, in part, of manufacture ;— in all essential features the same as the unfinished spear-points, that

FIG. 1.



Rude Implement from the gravel. Actual size. Mus. No. 11752.

are found on the former sites of an arrow-maker's labors ; and yet exhibiting in its unfinished state, the peculiarities, that mark the differences between the paleolithic and neolithic forms.

Figure 1 represents a second specimen of a portion of an argillite pebble, with a portion of the water-worn or weathered surface

constituting the greater part of the base, on one side of the implement. The corresponding side is a uniform surface, but is less smooth, and exhibits every indication of being much less weathered, although it is much altered from a freshly fractured surface.

This specimen measures scant four and one-fourth inches in length. The base is, in width, a little less than one-half the length. The chipped portion is a uniform decrease in the width from the base, the flakes having been detached from both sides; and the edges. The specimen terminates in quite a blunt point, and does not appear to have been more acutely finished, than it now is. In general outline, figure 1 quite closely resembles many of the European flint implements from the river valleys, and bears far more resemblance to many neolithic forms than do the majority of the chipped flints from tertiary deposits lately described in detail by M. Robiero.²

This specimen was taken from the gravel, when in place, at the bluff forming the east bank of the Delaware river at Trenton, at a depth of seven feet from the surface.

Corroborative specimens, as they may be designated because of their more highly finished condition, have sparingly occurred also, and in such positions that they cannot be considered, though probably of the same age and origin as the ruder forms, or typical "turtle backs."

Figure 2 is an example of this more elaborately wrought form, which is of dual interest in being so remarkably similar to the European patterns of paleolithic implements, and as an excellent example of a connecting link between the ruder forms, such as have been figured in my previous report, and the still better designed specimens here figured. This spear-shaped, or pointed implement is carefully shaped from an argillite pebble, and has well defined sharp, if not cutting, edges. The base is rounded, and preserves the natural surface of the pebble. The point is quite acute, and the sides have been produced by chipping, so that a comparatively uniform surface has been produced. The degree of weathering is uniform, and so far as this can be trusted as a guide, the specimen has had each flake removed at practically the same time.

² Descrip. de Alguns. Silex E Quart. Lascados en contrados nos camados dos terrenos: Tertiario e Quaternario. M. Carlos Robiero, Lisboa, 1877.

FIG. 2.



Paleolithic Implement from the gravel. Actual size. Mus. No. 11539.

Figure 2 measures six inches in length; by from three to three and one-fourth inches in width, until near the point where the specimen suddenly narrows.

This interesting specimen, which was found at the bluff at Trenton, was in a narrow gorge, caused by running water which had not displaced the material forming the sides of the little chasm. It was nine feet from the surface, and overtopped by a large boulder. It bears considerable resemblance to certain chipped implements of jasper, porphyry and sandstone, which have been frequently found on the surface associated with ordinary Indian relics; and which the writer has supposed were mainly used as "teeth" for war-clubs. However this may be, such an implement as the one here described, might readily be mounted in a handle, or, having a blunt base, be held in the hand and wielded with terrible effect. Other examples of this form, both of argillite and other minerals, have been collected from the same locality.

Figure 3 represents a very artificial looking, and yet quite unique form of chipped stone implement. It certainly bears no resemblance to any common form of neolithic weapon or domestic implement. In general, its appearance is that of a rude spear, such as not unfrequently occur upon the surface, made of jasper and quartz; but the handle-like projection, which may or may not have been pointed originally, renders the matter of the probable use of the implement, as it is, a difficult subject to determine; but that the specimen is artificial, and designed for some definite purpose, I have no doubt.

This specimen measures four and five-eighths inches in length, and two inches in maximum width, exclusive of the projecting point or "handle" at one side. This projection is one and one-fourth inches in length. The chipping on this implement is quite well defined along the edges; and this, of itself, gives evidence of artificial force having been operating in the production of the implement; for we do not find traces of secondary chipping, whereby zigzag lines are straightened, occurring among crushed or frost fractured pebbles.

This so far unique form was found on the same gravelly bluff from which the preceding were taken, but at a point two miles distant, down the river. The specimen was exposed after a landslide which occurred on Aug. 24th, immediately after a violent storm of that date. A large mass of gravel was detached bodily,

leaving a fresh surface of the bluff, from which this specimen projected. The depth from the surface was about eight feet, but could not be accurately determined at the time.

FIG. 3.

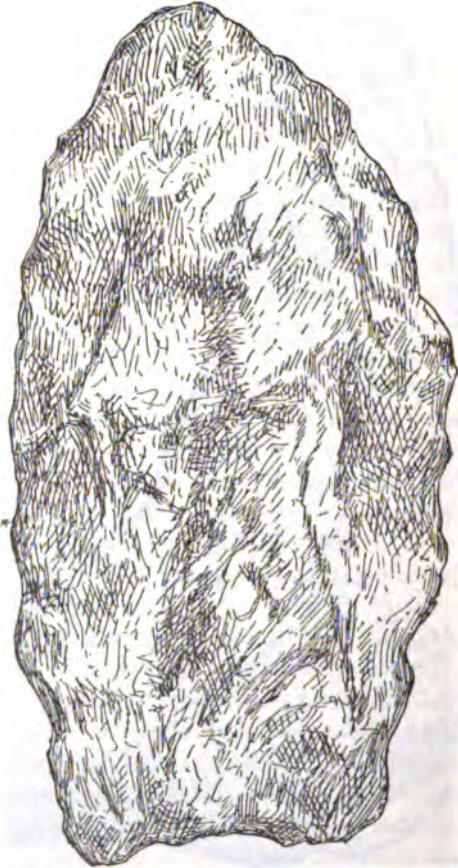


Chipped Implement from the gravel. Actual size. Mus. No. 12281.

Figure 4 represents a very carefully chipped argillite implement that bears a marked resemblance to many of the European specimens of paleolithic implements. The specimen measures four

and one-half inches in length, and a little less than two and one-half inches in its greatest width. In the chipping, this specimen varies somewhat from a typical turtle back, in that the under, or flatter side, is somewhat chipped, especially along the edges, which

FIG. 4.



Spear-shaped Implement from the gravel. Actual size.

throughout their entire length, exhibit traces of secondary chipping, whereby the edges were made more nearly straight. The general outline is that of a spear or lance-head, rather than an indefinitely shaped "chipped implement," as many of them are.

There is in this instance a well defined point, and broad, straight base, giving a general contour quite similar to certain jasper and slate "hoe-blades," as this pattern of neolithic implements is sometimes called.

This specimen, figure 4, was taken from the bluff facing the river, but two miles further south than the exposure near Trenton from which most of the specimens have been gathered. It was discovered in a *perpendicular exposure* of the bluff, immediately after the detachment of a large mass of material, in a surface that had but the day before been exposed and had not begun to crumble. The specimen was twenty-one feet from the surface of the ground, and within a foot of the triassic clays that are here exposed. Directly over it, and in contact, was a boulder of large size, probably weighing one hundred pounds; while at a distance of five feet above, was a second much larger boulder. The character of the mass, which was that of the bluff as exposed on the bank of the river near Trenton, was such as to render it impossible that this specimen of a clearly artificially chipped pebble could have reached this position subsequently to the deposition of the containing bed.

One feature of them all, and of those especially from the deeper gravels, needs to be briefly referred to; this is the worn condition of the edges of the several surfaces produced by the detachment of the flakes. There are, especially in fig. 4, no well defined outlines of a single facet, although each separate flake can be traced on the surface of the implement. This partial wearing away of these lines of separation of the several chips removed, does not occur in any marked degree in such jasper specimens as approach fig. 4 in general character of shape, size and chipping. Whether the result of use previous to being lost or discarded, or of wear by long exposure to the shifting movements of sand and gravel, one cannot determine; but of itself, it seems to closely connect these partly worn, yet clearly artificial forms, with rolled pebbles, which in outline only suggest the possibility of having once been chipped implements.

The four specimens of paleolithic implements, as we believe them to be, that are here figured, are so clearly of designed and not accidental shapes, that it seems unnecessary to give further illustrations, or additional reasons for demonstrating that they were fashioned by man.

A series of visits to several widely separated points, where the configuration of the country was such as to give excellent opportunities for examining deep sections of the gravels and the underlying beds of clay—cretaceous, or earlier—has enabled me to determine that above these clays there may be traced the unmodified drift, or such as is exposed on the east bank of the Delaware river at Trenton, N. J., a stratified drift of small pebbles and sand in alternating layers, covering limited areas, and of variable depth; and overlying the greater portion of these a soil—loess—also of variable depth, but seldom more than from three to four feet in depth. In this unmodified drift, which, like the underlying clay also, crops out occasionally upon the surface; in, but not of, the stratified gravels, and also not uncommon to the loess or surface soil, are numbers of large boulders of different rock, varying in size and weight, but of such dimensions that to the agency of floating ice alone, can the transporting force be attributed.

In my previous report, I have given sufficiently detailed description of the principal exposure of the unstratified mixed deposit, that I have maintained to be the *débris* accumulated at the foot of the glacier, the variations in its character from boulder clays, being such as are readily explained by the fact of its being a subaqueous deposit, and I will here, therefore, refer only to one feature of the pebbles, determined by my subsequent studies of their character. Before doing so, however, I desire briefly to refer to a publication issued subsequently to my original draft of this report. In the Annual Report for 1877, of Prof. Cook, State Geologist of New Jersey, we find an excellent map, and a detailed account of the glacial drift covering the northern portion of the state, consisting of unstratified boulder clay and ice-scratched, angular pebbles. Where the *débris* of the ancient glacier ceases to be of this character, Prof. Cook considers the glacier terminated, and all the material lying to the southward is a modified deposit due exclusively to water action. In this, as our preceding report shows, we do not wholly concur; and offer here, in some detail, our reasons for connecting more closely, than Dr. Cook has done, the phenomena of the depositions of the northern and southern gravels.

Of the great glacier itself, Dr. Cook remarks, in the report alluded to, "even in New Jersey, it covered the tops of the highest mountains.

This immense mass of ice had a slow movement from the north

towards the south, in which it scraped or tore off the earth and rocks from the rocky mass under it, grinding, grooving and smoothing down the rocky surface, and pushing forward, tumbling and rounding the fragments of stone and rock, and finally leaving them at the southern edge of the glacier, or wherever breaks in it may have allowed the loose materials to rest.

The terminal or southern edge of the drift is well and very plainly marked by a line of hillocks of mixed clay, sand, gravel, rounded stones and boulders of large size."

Of its extent, geographically considered, he further remarks of it, as "beginning on the eastern side of the State on the north side of the Raritan, at Perth Amboy, the line of Short Hills extending from that place to the First Mountain, and passing just north of Metuchen, Plainfield and Scotch Plains, marks the southern edge of the drift.

From there, it extends to the Delaware below Belvidere. The portion near the Delaware shows the gravel and boulders very plainly, but it appears to have been washed and otherwise modified by floods or great bodies of water descending in that valley. The whole line of this moraine is remarkably plain and well defined.

Across New Jersey the line is not exactly east and west, but appears to deviate towards the north, the deviation being greater somewhat in proportion as the ground is more elevated.

The hillocks of stones, gravel and earth, which together made this long chain, have every appearance of piles of *débris* which have been thrown down without order, and without the presence of water to sort or arrange the various materials."

Nowhere, as here described, does the terminal moraine of the great glacier approach the bluff at Trenton nearer than forty miles; but this distance is really of little moment, in connection with the subject of man's presence here during the maximum severity of glacial conditions in North America. With the existence of a glacier filling the entire valley of the Delaware, forty miles northward, and extending across the state to the Atlantic coast, there must necessarily have been a widely different physical condition of the entire territory extending southward. Much of this area, now constituting the southern, low-lying portion of the state, was submerged; and Mr. Belt³ has pointed out, that over such

³ Quarterly Jour. of Sci., Jan., 1878: London.

low-lying and submerged areas, there would be spread out a vast amount of material, by the agency of sub-glacial torrents, consisting of the true glacial *débris*, borne still farther southward by the currents caused by the melting of the glacier at and near its base. Such swift-flowing currents might readily, through long periods of time, being charged with sand and small pebbles, wear away much of the ice-scratching that is so characteristic of the pebbles in the more northern drift; but to such sub-glacial rivers we cannot well refer the enormous boulders scattered promiscuously through the gravel bluff, as seen at Trenton; but rather to the more powerful agency of floating masses of ice detached from the glacier as it existed further to the north.

This bluff at Trenton, Dr. Cook considers as "modified" in post-glacial times. He remarks:

"The beds of stratified drift, at various places in the valley of the Delaware, south of the line of glacial drift, bear marks of having originated from the action of water. The boulders and cobble stones are all water worn, and round, and are not scratched or streaked. They have all come from places farther north in the valley and have been moved and deposited by powerful currents. There are to be seen in the railroad cuts near Trenton, where the exposure of this kind of drift is very fine, boulders of gneiss, from the rock near; of red sandstone from the country just north; of trap from Lambertville; of altered shales from the near trap; of conglomerate from New Milford; of magnesian limestone from the valleys of Warren county; of conglomerates from the Blue Mountain, and of cherty and fossiliferous limestones from the Delaware valley north of the Water Gap. The gravel consists largely of quartz, but it contains numerous fragments of red shale, and black slate."

The above description is not wholly applicable to the bluff forming the east bank of the river; but is the locally modified drift to which I have frequently referred in the preceding pages of this report. In the exposure of stratified gravels "in the railroad cuts," I have as yet found but few specimens that may be considered as *probably* artificial, as already mentioned. On comparing the materials forming these two exposures of the river bank and the rail-road cutting, a marked difference in the degree of angularity, the size and position of the large boulders, is readily seen, and indicates an additional and subsequent agitation and

redepositon of the stratified gravels; and it is well here to mention, that Dr. Cook has, since the issue of his report for 1877, informed me, that he has met with boulders in this same rail-road cutting, clearly showing glacial scratches upon their surfaces.

Assuming that no extension of the ice-sheet covered any inland portion of the state south of the limits described by Prof. Cook, we have in the territory southward much elevated ground that would afford safe harbor for the glacial people that dwelt here; and an area of sufficient extent to sustain a considerable fauna of even large mammals. This is indeed, an important consideration, for it is doubtful if the fauna was solely one of fish and birds, these people could have withstood the rigors of a glacial climate. Furthermore, it was from such an area of elevated ground, free, at least for portions of every year, from snow and ice, that the stone would be gathered, from which they made the rude implements, which continually being lost or discarded, were carried by the floods of the period, and finally lost, in part in the gravels, as we now find them. During the gradual distribution of the gravels in the southern section of the state, which, as we know, were largely altered by water action; be the causes what they may, they were doubtlessly violent in action and of long duration, and it is strange that a single pebble should escape being shorn of every vestige of the ice-scratches, that once doubtlessly covered them all; but any agency capable of producing such effects must have been in connection with some such phenomenon as the melting of the great glacier, with the several characteristic features that would be associated with the gradual cessation of glacial conditions. As we have already pointed out, there is much of this stratified gravel, covering areas of various extent within the territory covered by our researches; but it is of very different character, as compared with the boulder and gravel deposits, to which we now particularly refer.

There is other evidence of a close connection between the boulder clays of the upper Delaware valley, and the coarse, unstratified gravels at Trenton, to which we will refer in another portion of this report.

This connecting link, as it were, was doubtlessly a prolongation of the ice-sheet, extending down, and nearly filling, the present valley until it met the open sea, where the present bluff at Trenton now forms the eastern bank of the river.

In commenting on the physical character of this deposit mention was made of the absence of ice-scratches on the pebbles and boulders forming the mass of glacial *débris*, from which the majority of the rude implements were taken; and Prof. Shaler⁴ also remarked on this circumstance, in his report on the age of the gravel beds from which the specimens here described have been obtained. In my previous report I endeavored to explain their absence by the probable circumstances of their accumulation where now found, and Prof. Shaler agrees with me, as to the deposition of this gravel "in the sea near the foot of the retreating ice-sheet."

Subsequent examinations of thousands of pebbles in this same deposit and at other localities where it outcrops, has resulted in finding a few pebbles, and I believe one stone implement that clearly exhibit ice-scratches; and besides many angular pebbles, there are others that are smooth but not polished and have a limited portion of their surface beautifully planed off and as polished as glass, which latter feature appears to be the work of moving ice passing over these interesting specimens when in some retaining matrix.

It may be well here to consider how far the material caught up by the last glacier that occupied the present valley of the Delaware, transported pebbles of an earlier day; for it must be borne in mind, that the masses of pebbles of any glacial deposit are not the exclusive production of the glacier; not fragments of rocks in place, that were broken away and rolled and crushed until every angle was obliterated. For ante-dating glacial conditions, there were smooth water-worn pebbles in abundance. Prof. Shaler⁵ mentions the implements described in this and my earlier report, as "made in a region where water-worn pebbles greatly abounded as they now do all along our shores." The upper valley of the Delaware doubtlessly abounded in such pebbles in pre-glacial times, and such loose material scattered over the level surfaces of the rocks we can easily conceive as being transported by a glacier one or more hundred miles, and yet escape any scratching

⁴ Tenth Annual Rep. Peabody Museum; p. 44. In commenting upon the character of the material forming the bluff, Prof. Shaler remarks, "all the pebbles and boulders so far as observed, are smooth and water-worn; a careful search having failed to show evidence of distinct glacial scratching or polishing on their surfaces." This, it will be seen, will not hold good concerning all the material forming this deposit.

⁵ l. c., p. 47.

whatever. To this subject we will refer again, with reference to the associated implements.

This additional determination of characteristic features of the mass constituting the bluff forming the eastern bank of the Delaware river at Trenton, N. J., is of much importance in its bearing on the question of the age of the deposit, as it seems to be confirmatory of the opinion previously expressed, that the deposit is intimately associated with the glacial epoch; is, indeed, one of its phenomena; and the contained implements, undeniably of the same age, demonstrate the presence of inter-glacial man upon the Atlantic coast of our continent; a point in geological time so distant that we are scarcely able to realize it. Like indications of such vast antiquity are not wanting elsewhere; and Mr. Pengelly⁶ has lately remarked of the traces of human occupancy of Kent's Cavern, England, that "in the present state of the evidence" he is "compelled to believe that the earliest men of Kent's Hole were *inter-glacial*, if not *pre-glacial*."

I have already briefly referred to stratified gravels as a characteristic feature of the geology of the surface of this low lying portion of the state. Their structure is such, it seems probable that subsequent to the retirement of the last glacier there has been a protracted period characterized by extensive floods, with powerful currents and at various localities, dependent wholly upon the contour of the country at the time, which was by no means regular or level, the glacial drift proper has been carried away and redeposited in its present condition.

In such stratified gravels I have not been successful in finding the characteristic forms of paleolithic implements such as occur in the drift as exposed on the river bank. A few doubtful specimens have been met with, and a few that may probably be accepted as of artificial origin; but I am led to believe that the violence of these post-glacial floods, in reassorting the drift, has well nigh destroyed every vestige of artificially chipped surfaces and edges. Where the original deposits were comparatively undisturbed the implements scattered through the mass were preserved as we now find them.

I have endeavored to show that the only objection to the gravel deposit forming the river bank being unaltered glacial drift, the

⁶ *Nature*, No. 407, Aug. 16th, 1877, p. 323.

comparative absence of ice-scratches, may be explained away by its being a subaqueous deposit; and in considering the limited areas of undoubtedly stratified and reassorted gravel, the probable character of the force operating to produce this re-arrangement must be carefully considered in connection with the condition of the supposed stone implements found within its mass. In the unmodified drift we have seen that the contained implements are unworn to any significant degree, but those that have as yet occurred in this stratified gravel, are so rolled and worn that it becomes, perhaps, a question whether they are implements or natural forms. If they are artificial, the hypothesis formed for these implements of the unmodified drift⁷ is strengthened by the condition of such specimens as have unquestionably undergone the destructive action of long exposure to abrasive contact with sand and pebbles in connection with strong currents of water.

So far as I have been able to trace the course and extent of these stratified gravels, they do not appear to have been formed by any, *geologically considered*, protracted flow of water, but rather by comparatively local floods, which, having spent their force upon the drift for a definite time flowing in a given direction, have had their currents diverted, and then, if less powerful from any cause, only the less resisting material has been moved from such of the original deposits as were washed by the newly made stream. So very limited are the areas covered by many of these tracts of clearly stratified materials, that it is possible many of them are explicable by reference to peculiar local conditions of the once existent glacier, and are not, in reality, a post-glacial phenomenon; and finally, it must be borne in mind, that the material of these stratified gravels is sand and small pebbles, with rarely a small boulder of a cubic foot in dimension; but in no instance, do the massive boulders, weighing several tons, occur as a constituent of these stratified deposits, although the latter may occasionally surround such an one, as where the stratum is of little depth, but even such an occurrence is unusual. Where the large boulders occur, even upon the surface, there is the drift as we find it on the river bank; unless they clearly are, as we will see quite frequently happens, a feature of the surface soil itself.

Again, local disturbance of the surface as by unusually violent

⁷ Tenth Annual Report, Peabody Museum, p. 47.

action of water, such as sudden overflows caused by storms, may have the effect of transporting material from various strata of widely different character, and in this way may we account for the occurrence of paleolithic implements in positions to which they are really foreign; and it is only to be wondered at that there is really so little commingling of the two forms. As an instance of this, I may mention, in detail, the following occurrence:

On the afternoon of Friday, August 24th, 1877, there occurred a remarkable rainstorm, over a limited area in this state, of but three hours' duration; but during which time it is estimated that over eight inches of rain fell. The surface of the country in many places was quite altered, and the small spring brooks were suddenly converted into streams of great bulk. When such brooks flowed ordinarily between high banks, the confined waters carried away vast quantities of surface soil and gravel, depositing them on lower levels or transporting them to the river.

The details of this unusually severe storm direct our attention to the effects produced upon the surface, whereby unquestionable specimens of paleolithic implements are brought to positions that we may call abnormal. In one extensive deposit of *débris* of every description that was violently torn from the uplands and spread over an expanse of meadow, after passing through a narrow gorge on the writer's farm where there occurs an outcropping of the gravel of the river bluff, I found too very characteristic specimens of these implements, associated with fragments of pottery and a small grooved axe. Now these several specimens doubtlessly were widely separated previous to their last localizing in the meadow. Inasmuch as an occurrence of this character had the effect of thus commingling the two forms of paleolithic and neolithic implements, it can scarcely be urged that the fact of finding isolated specimens on the surface of the country can effect the question of the geological age of the specimens, seeing that they are, as a class, characteristic of the gravel and not of the surface, where their presence is exceptional; nor can it be held explanatory of their presence in the older gravels, even if admitted to be of vastly greater antiquity than ordinary Indian relics. No such occurrence as that we have related could inhumate these implements to such great depths as have been recorded of many specimens in the Museum, and associated them so intimately with boulders of such large dimensions as those with which they are found. A

violent flood, even of long duration, would have the effect of spreading over a large area a comparatively shallow deposit of gravel, and at or near the surface, as newly made, on the abatement of the water, transported implements might occur, as we have seen in this case, but they would not be inhumed to a depth of thirty and forty feet in a boulder-bearing bed of gravel, miles in width. On the other hand, in a stratum of fine sand and pebbles washed from unmodified drift, we can readily see how an implement from the latter might become incorporated with the former rearranged deposit.

In this connection, I have endeavored to determine the transporting power of water, unaided by ice, in connection with the movement of boulders even of small dimensions; and so far as I could determine, where there was no precipitous descent in the river bed, the ordinary freshets in the river seldom, and the currents never carry other material than sand any important distance. The pebbles and small boulders are gently moved by the water, when they roll down from the banks into the stream, until they are fitted into some hollow, and there afterwards they appear to remain. It would seem to require a combination of circumstances, such as the undermining of gravel beds, and a violence or rapidity of flow, in connection with sudden descent, to move stones of one or two pounds in weight, for any important distance. I am inclined to believe the unaided transporting power of water, so far as moving the pebbles upon a river bed is concerned, is really quite limited.

We are now brought to consider, in its connection with the contained paleolithic implements, the surface soils, that at varying depths overlie both the unmodified drift, as I have claimed it to be, and the clearly stratified gravel. This surface soil, as to its origin, constitution and great variation in character, opens up an extensive field of inquiry, which in great measure is beyond the scope of my report; but the fact existing that paleolithic implements occur in it, renders it necessary to determine their true relationship to those of the underlying gravels.

In studying the surface soils covering the drift, to which attention has been more particularly drawn, I will, at first, briefly quote from Prof. Cook's *Geology of New Jersey*,⁸ as to the general character of these deposits. He states, "there is a remarkable

⁸ *Geol. of N. J.*, p. 249, 1868.

degree of uniformity in the surface of the country. The inequalities of the surface are almost entirely caused by denudation. The streams, unlike those of the northern part of the state, have no apparent connection with the geological structure of the country. They are simply channels worn in the surface of the ground, following the lines of most rapid descent to tide water. "Of the soils," he remarks, "it is a loam varying from light sandy to sandy, gravelly and clayey, susceptible of high degree of improvement."

Whatever the particular character, and whatever its origin, it is evident that this soil is a sedimentary deposit, originally a fine sand, latterly increased in bulk, by aerial denudation of the broken drift rocks that outcrop through it, and the constantly added decomposed vegetable matter. The main agency in originally distributing this, the major portion of the soil, appears to have been the comparatively quiet waters that immediately followed the abatement of extreme glacial conditions.

This product of rock destruction, from the grinding action of the ice, throughout the whole extent of the northern hilly portions of the state was brought down in large quantities, and its depth, as originally deposited, was probably quite uniform. We see now that this uniformity of depth is wanting, as explained by the remarks of Prof. Cook; and the inequality of the land, which is a comparatively modern feature, becomes more pronounced every century.

To the contained paleolithic implements I need scarcely more than allude, as I have, in my previous report, expressed my belief as to their origin in connection with their surroundings. Just as there is abundant evidence of the presence of man dwelling at the foot of the great glacier that occupied the valley of the Delaware, when boulders, gravel and coarse sand were being deposited in vast quantities in the open sea, in which the southern terminus of the ice ended; so, as the glacier gradually left the valley of the present river, melting rapidly, the flood of waters, flowing southward, were surcharged with sand and mud, which, as the waters spread, and flowed more quietly, settled on the bottom of the then shallow sea; and here also, have we traces of this same race, who, as before, continued to lose in the depths of the once deeper, and now shallow waters, those implements of stone which tell the story of their sojourn here.

Still another important feature remains to be considered in con-

nection with the surface soils. I refer to the numbers of immense boulders, which are not only embedded in them, but are, geologically, *of them*, i. e., synchronously deposited. There are, I think, many facts confirmatory of this view, and their importance as bearing upon the question of the age of the implements found upon the surface, is great.

One question will certainly be asked of these surface boulders—may not the material originally surrounding them have been removed by means inadequate to alter their positions, and were they not deposited prior to the accumulation of soil which partly or wholly covered them? I am convinced that in many instances, such is not the case, for several reasons.

Take the boulders of a given area, and it will be found that there is no regularity whatever in their positions, wherever met with. The long axes of their diameters point in all directions. In one instance an irregularly cylindrical boulder, measuring seven feet in length and about nine in circumference at the larger end, rested nearly perpendicularly in the soil, which was three feet in depth below the buried end; while two others in the same area of about one hundred acres, of nearly the same shape but smaller, were in somewhat similar positions. Had the soil been removed subsequently to their deposition these upright stones must have fallen over and assumed horizontal positions. Examinations of flattened boulders, also, has shown that there was in many cases a considerable depth of soil beneath them, and thus separating them from the underlying gravels. In other instances, they have been noted as embedded in soil that overlaid the plastic clays, from which the earlier drift had been removed, or on which it had not, from some cause, accumulated.

The surface soils we have seen contain nothing but sand in so minute condition that it could well be carried by gently moving waters. In such a deposit these boulders occur, and it is evident, that while apparently belonging to it they could not have reached their present positions by the same agency that deposited the soil itself; but it is a marked feature of the earth immediately surrounding every boulder that there is a small quantity of little pebbles, and that as the distances increase between the positions of any two the proportion of gravel also decreases, and considerable areas, often several acres in extent, do not have a pebble of any size upon them.

I have therefore concluded, as in part already stated, that the soil itself was very slowly deposited from comparatively quiet waters, on which occasionally drifted an ice-raft from some distant glacier, and here and there an embedded boulder, loosened from its mass, sank to the bottom of the shallow sea, carrying with it more or less of such finer material as had originally been gathered up by the ice at the time. This would explain the presence of the pebbles mingled with the soil, as well as the larger boulders; and, if we admit the existence of inter-glacial man, would fully meet the difficulties of assigning an earlier origin to the surface-found rude implements than that of post-glacial times.

While to base the assertion of a paleolithic man having dwelt on our shores during so remote a period upon the presence of implements of a paleolithic character in our surface soils, would certainly be hazardous in the extreme, it does appear probable that they do really confirm the alleged antiquity of similar implements occurring in the earlier accumulations known as "drift."

Arguing thus, it might reasonably be claimed that these rudely fashioned implements should be met with in the northern hilly portions of the state, where boulder clay and striated pebbles occur in abundance as glacial drift. Careful search in favorable localities, however, has failed as yet to bring to light unquestionable specimens, although several chipped pebbles had they been met with elsewhere would probably have been so classed. This fact, at first glance, seems to render doubtful the claims of glacial age asserted of the specimens found at Trenton; but this possible absence of implements in the boulder clays, I think, may be explained by the fact already referred to, that the implements at Trenton were made during the prevalence of the ice-sheet, which at the time rendered the upper Delaware valley uninhabitable by a people dwelling at the foot of this glacier, where there was doubtless some uncovered land; and there are abundant indications to show that this gravelly bluff and all the country south and east of it, was then the bottom of a shallow sea.

Prof. Dana⁹ has referred to this very point at Trenton as sea-coast during the cretaceous period, remarking of the Delaware river, that it "emptied into the Atlantic at Trenton; and the regions of the Delaware and Chesapeake bays, were out at sea."

⁹ Manual of Geol., 2nd Ed., p. 478.

Nor did the coast line materially change in much later times. Of the Miocene period, the same authority states,¹⁰ "there was no Delaware or Chesapeake bay," and again, upon the same page remarks, "the Atlantic Tertiary region must have remained submerged until after the miocene era." When finally it did emerge, which was undoubtedly in Pliocene times, when, as Prof. Dana states¹¹ "the continent * * * * had at least its present breadth along the larger part of the Atlantic coast, if not a still greater eastward extension," it is safe to infer man first appeared on our eastern shores. Prof. Marsh¹² has remarked that "the evidence, as it stands to-day, although not conclusive, seems to place the first appearance of man in this country in the Pliocene, and the best proof of this has been found on the Pacific coast." Granting this, the evidence of his presence on the Atlantic coast is fairly inferential, when, if in the chipped pebbles described in the present report, we have traces of an inter-glacial man; for we can scarcely conceive of a race originating *de novo*, or migrating voluntarily to the foot of a glacier; but that this early race should withstand the maximum rigor of a change to glacial conditions we know is wholly practicable; but whatever the changes that may have occurred in climate, in distribution of land and water and of elevation or depression of the former, at the close of the tertiary and dawn of the quaternary periods, it is evident that the present low lying southern section of the state was beneath and not above the sea when the great glacier occupied the valleys and overtopped the mountains that flank the Delaware.

Having, as clearly as it lies in my power to do, described in their several aspects the containing beds from which the relics here described have been taken, and having endeavored to fix the date of deposition of these, as well as demonstrate the artificial character of the implements, it is desirable to show what relationship the latter bear to the deposits containing them. Are they really of co-equal age, or are they intrusive objects?

In considering the relationship of these rudely fashioned stone implements to the beds containing them, and the place of the latter in the geological history of the globe, it must first be borne in mind, that the many changes which have been shown as having

¹⁰ Ibid, p. 522.

¹¹ Ib., p. 522.

¹² Proceedings American Assoc. for Advance. Science: Address at Nashville, Aug., 1877.

occurred in the past, were all periods of long duration, and the changes of climate and of depression and elevation of the dry land, were all gradual occurrences, and none of such violence as to render the globe, the while, uninhabitable by man. The severity of the glacial climate itself, it is known, but partially destroyed, though it largely displaced animal and vegetable life; and if the displacement of mammals is a clearly ascertained fact, it is quite safe to include man, if he then also existed here, as we have endeavored to show was probably the case.

Although there is no reason, geologically, why man should not have occupied our Atlantic coast during the Pliocene period, it is not to be assumed that he did, but it remains for the archæologist to demonstrate his former presence clearly, if any indications have been discovered that seem to be indicative of such early occupancy by man of America. In the implements from the gravel we certainly have nothing indicative of this, for, as has been clearly shown, I think, the facts, as yet gathered are indicative of an interglacial, and not a pre-glacial age. Even this may be questioned, and the suggestion made that the contained implements are of a later origin than the original deposition of the containing bed; and that during some material change which the deposit, originally glacial, has undergone, these implements have become embedded. To prove that such was not the case, I desire to call attention to certain features of the gravel beds as we now find them. I have frequently referred to the abundance of massive boulders that are everywhere scattered *promiscuously* through the deposit, and are also very characteristic of the subsequently deposited surface soils. If it is maintained that this gravel deposit was originally a mass of striated boulders, pebbles, sand and clay, which water has subsequently wholly changed in character and rearranged, then such water action must necessarily have so loosened up the mass, in the general overturning of every pebble until the ice-scratches were obliterated, that the boulders, many weighing twenty tons or more, would have settled to the very bottom of the disturbed moraine; and if, during this supposed process of re-arrangement, which however gradual and gentle in its movement must have had the above effect, then the lost chipped implements which became embedded in the mass, would here more surely have undergone a grinding and crushing action that would have obliterated every trace of artificiality, than in the small percentage of chance of

escaping destruction if caught up and carried for miles by the moving glacier. Again, if the gravel, where it now lies, has been deposited by simple water action, which, considering the contained boulders, is inconceivable, subsequently to the retirement of the glacier, and during this later transportation, the pebbles have become smooth and oval, and synchronously with such assumed post-glacial action, the paleolithic implements have been lost, then they should also have undergone a like alteration of their surfaces, ending in the complete obliteration of the characteristic features of artificial chipping; but I have already pointed out, that where such post-glacial redeposition and stratification have been effected, there I have not been able to discover any implements that were free from all doubt as to age and origin; and the fact of their occurrence on the surface, especially in fields, where there is an outcrop of the gravel, has this bearing upon the question of the co-equal age of the deeper lying specimens and their containing bed; that if a given deposit of unmodified drift—a terminal moraine—or such a formation as is exposed on the banks of the river, yields, at various depths at that point, a number of chipped pebbles, it is at such a position as an extensive level outcrop of the same deposit, that we should expect to find the same forms; and as the outcropping is of longer duration than the occupancy of the later races formerly dwelling in the country, traces of these also will unavoidably be mingled with the older forms. Had the paleolithic implements been found only upon the surface, although much weathered and otherwise evincing indications of greater age, there would be no positive proof of an earlier origin than the ordinary Indian relics, except that, even in such a position as a gravelly field, they are usually met with at greater depths, *i. e.*, a foot or more below the surface, than are the neolithic forms.

When under the impression that the Indians were a paleolithic people when they first occupied the Atlantic coast of North America, and that these rude implements were to be ascribed to them, I remarked of these rude forms,¹³ that “just in proportion as these relics—stone implements generally—are rude in manufacture and primitive in type, *they are more deeply embedded in the soil,*” and I have since had no reason to modify this statement, otherwise than to remark that those of the gravel are of uniform

¹³ *Nature*, Vol. XI, p. 215. Jan. 14, 1875, London.

character, and do not vary according to their depths; but instead of their being traces of the Indian, I am convinced that they had a pre-Indian origin. In our references to the boulders found upon the surface, I have shown how many of these paleolithic implements may have become incorporated with the surface soil, and long antedated its deposition, in their conditions as chipped implements. My remarks on the age of the surface boulders indirectly referred to the age of accompanying relics, and have an obvious bearing upon the question of the co-equal age of the gravel and its accompanying implements.

Finally, if the same age is ascribed to these paleolithic implements and the ordinary Indian relics, then, as already asked, how could the one series become embedded, often to great depths, and not representatives of any class of weapons, domestic utensils and ornaments?

What seems to me a most conclusive argument in favor of the views herein expressed, is that while the paleolithic implements are characteristic of the gravel, and neolithic implements of the surface, it is quite natural to find the former, as we find its containing bed, frequently cropping out upon the surface; while we never find this same soil a feature of great depths, nor do the relics of the Indian, that now dot its surface, ever occur in such inexplicable positions. We can easily imagine an earthquake creating a deep chasm or crack in the surface, and inhuming a comparatively modern implement; but there are no traces of such cataclysmic action here, and if such an event had occurred, there would be other evidences than the commingling of objects from the surface with the underlying deposits, but such are wanting and the same objection still holds of such violent occurrences only inhuming paleolithic forms; unless, indeed, these are held to be the original forms of the later varied patterns of stone implements. This, however, is scarcely compatible with the universally accepted conclusion of the Asiatic origin of the so-called American Indian. If not advanced beyond the production of such primitive implements, they would scarcely have reached our Atlantic coast, having entered the country on the Pacific side.

Perhaps it is a wise caution that is exercised in but provisionally admitting the great antiquity of American man, but were these rude implements not attributed to an inter-glacial people their co-equal age with the containing beds would never have been ques-

tioned; and yet we are not in possession of facts that even seem to dispute the asserted antiquity of the American races.

Having determined that the rude forms of stone implements such as we have here described indicate the former occupancy of our shores by a race long disappeared, and that the date of that occupancy extends as far back, at least, as the closing of the glacial period, I desire to conclude my report on this subject with a few remarks on what I am led to believe are the racial belongings of this early race.

A careful study of the relationship of the implements characteristic of the gravel, to the better known traces of the Red-man—the ordinary Indian arrowheads, spears and axes—has shown that it is highly improbable that the Indians of our country were the primal occupants; but rather that they were preceded by a still ruder race. This conclusion is based not only upon the character of the relics themselves, but upon the fact, as I consider it safe to assert it, that the character of the country was greatly different at the time these implements were made and used than now.

As to the ordinary stone implements, it may be mentioned that those found upon the surface are all in accordance with what we know of the Indians, who, while occupants of the Atlantic coast of North America were dwellers in a densely wooded country, with the distribution of land and water as it now is; but are not these paleolithic implements wholly out of place in like positions? One cannot conceive of any use for a "turtle back celt," or for some of its modifications such as are seen in the limited range of patterns of the older forms. These rude implements of themselves, when recognized as artificially shaped, suggest uses, to which only a people living in a country of vastly different character, and with a different fauna, could put them. A marked variation in the physical condition of this country, both as to distribution of land and water, and climate, with concomitant differences of fauna and flora, we have seen, obtained during the glacial epoch, and to this period, and not to the—geologically speaking—recent times, must we ascribe these rudely fashioned implements, which by their presence in the drift gravels give us a faint glimpse of the primal race that occupied our shores.

When also, we consider that the several conditions of glacial times were largely those of Greenland and Arctic America, and that there is unbroken land communication between the desolate

regions of the latter, and our own more favored land, and, more important than all, that there now dwells in this ice-clad country a race which, not only in the distant past, but until recently (if they do not now) used stone implements of the rudest patterns; it is natural to infer that the traces of a people found here, under circumstances that demonstrate a like condition of the country during their occupancy, are really traces of the same people.

Having carefully studied the characteristic arts and habits of the modern Eskimo, and compared them with the existent traces of the people of Aquitaine, Prof. Dawkins¹⁴ finds so great a similarity, that he concludes that "these facts can hardly be mere coincidence, caused by both peoples leading a savage life under similar circumstances: they afford reasons for the belief that the Eskimos of North America are connected by blood with the paleolithic cave-dwellers of Europe," and again, "the conclusion * *

* * seems inevitable that so far as we have any evidence of the race to which the dwellers in the Dordogne belong, that evidence points only in the direction of the Eskimo."

This conclusion of Prof. Dawkins is of peculiar interest in that it is evidence that the Eskimo, now strictly a boreal race, once spread over a vastly more extended range of territory, and as a race is of such antiquity, as shown by the investigations of archaeologists in Europe, that it is easy to realize, that, at one time, they dwelt as far south in America as New Jersey.

In his excellent article on the Tribes of the Extreme Northwest, Mr. Dall¹⁵ remarks, "my own impression agrees with that of Dr. Rink, that the Innuït were once inhabitants of the interior of America; that they were forced to the west and north by the pressure of tribes of Indians from the south," and again, "there are many facts in American ethnology which tend to show that originally, the Innuït of the east coast had much the same distribution as the walrus, namely, as far south as New Jersey." The conclusion reached by Dr. Rink, to which Mr. Dall refers, is, that the "Eskimo appear to have been the last wave of an aboriginal American race, which has spread over the continent from more genial regions, following principally the rivers and water-courses,

¹⁴ *Cave Hunting*, by W. Boyd Dawkins, p. 358, London, 1874.

¹⁵ *Contributions to N. A. Ethnology* (U. S. Survey of Rocky Mt. Region), Vol. I, p. 102.

and continually yielding to the pressure of the tribes behind them, until they have, at last, peopled the sea-coast."¹⁶

These several quotations refer wholly to post-glacial forced migrations of a pre-Indian people that were dispossessed of their territory by the incursive race; and the result of my own investigations may be held, I think, a preface to this their later history, wherein I venture to date their occupancy of the country as far back as during, if not prior to, the last great geological change—the great ice age.

Considering the purport of the remarks quoted above, from several competent workers in widely different fields, and who, yet, come to the same conclusions; if it still be objected that the characteristic implements of the gravel are also found upon the surface, I will but add that this is precisely in accordance with what must necessarily be the case, if the above conclusions of Mr. Dall and Dr. Rink be correct; that the Eskimos were displaced by "the pressure of tribes of Indians from the south." Such displacement must have occurred after the glacial epoch, and therefore the Eskimos, being the occupants of the country at the time of their contact with another race, may have been the fashioners and users of these surface-found paleolithic relics, in part; which, like those from the deeper gravels, are all well worn and decayed upon their surfaces by long exposure, and thereby give evidence of their antiquity.

When we come to examine a full series of ordinary surface-found arrowpoints, as we gather them by the scores from our fields, and occasionally find associated with them, a rude implement of the type of those found in the gravel beds, we are naturally led to draw some comparisons between the two widely different forms. The arrowheads, and others which from their size may be considered as spear or lance-heads, are of two quite different types; being those made of jasper, chert, quartz, and rarely of argillite, of a dozen different patterns; and those of argillite of a nearly uniform pattern and of larger sizes, as a rule; all greatly weathered, and varying notably from the arrowpoints of other minerals, in being of much coarser workmanship, and in this respect, seeming to be a natural outgrowth of the skill once exercised only in producing the primitive forms of the glacial drift. If it be claimed that these rude arrowpoints of argillite, now so weathered and

¹⁶ *Tales of the Eskimo*, London, 1875.

worn cannot be distinguished from ordinary Indian arrowheads, I reply that there is abundant evidence that the Eskimo had the bow in use, in times as far back as the close of the glacial epoch in North America; and furthermore, there is evidence that while occupancy of the Atlantic coast by the Eskimo was greatly prolonged, the advent of the Indian was not so very far distant, comparatively speaking. In such a case, there must as necessarily be a commingling of traces of the Eskimo, or post-glacial relics of the earlier race, and the more recent Indian relics; just as I have shown there was a continuance from inter-glacial to post-glacial times, of the presence, along the Atlantic coast, of paleolithic man.

Finally, as bearing upon the subject of the post-glacial occupancy of the country, by a pre-Indian people, I desire to give in some detail, the conclusions reached after a visit to the rock-shelter at Chickies, Lancaster Co., Penn., discovered by Prof. S. S. Haldeman, who kindly accompanied me and at the same time laid open for my study, at leisure, the extensive collection of stone implements he has gathered, not only from the rock-shelter, but the neighborhood generally. A careful examination of the specimens from this rock-retreat, shows a marked mingling of the two forms of implements, which I think is to be accounted for by there having been a forcible displacement of the earlier race; or by re-occupancy by the Indians, at a comparatively short interval after the voluntary retirement of the first occupants. The result also of careful study of the stone implements from the neighborhood, and more particularly of the islands in the Susquehanna river, is the discovery of several specimens of such rude forms as characterize the gravel beds at and near Trenton, New Jersey.

Since the above was written, I have received the following letter from Prof. Haldeman, accompanied by a number of very interesting specimens.

MY DEAR SIR:—

There is a group of small islands in the Susquehanna about a mile below Bainbridge, Lancaster Co., Penn. One of these islands is named Moore's; another, Forge Is. Yesterday, in company with Hon. H. H. Wiley, I visited Moore's Is., of several acres in extent, formerly cultivated; but a flood, a few years ago, swept off the cultivable surface, leaving a mixture of sand, gravel and clay upon this denuded surface and around the edging banks (five to six feet high). I found the objects sent herewith, including a few found previously by Mr. Wiley, at the same

locality. I shall not attempt to decide whether the gravel is drift, or ordinary river accumulation; but a flood like that which removed the arable land, would not transport gravel above the river bottom, and the probabilities are against an ice freshet being the transporter.

Hoping that you will find the specimens interesting, I remain

Yours truly,

S. S. HALDEMAN.

Chickies, Pa., 27th Sept., 1877.

Two of the specimens referred to, in the above letter, are quite rudely chipped "hoe-shaped" implements, similar to others in his collection from neighboring localities; but not common to the Delaware River gravel bluff, from which I have taken but one specimen. These from the Susquehanna, and one from near Trenton, just referred to, somewhat resemble the "rudely chipped flint axes" of Scandinavia, as they are designated by Prof. Nilsson; but are not exclusively chipped upon one end, the edge extending down one or both sides. Those forwarded by Prof. Haldeman, bear upon their surfaces every mark of the weathering so characteristic not only of the one similar specimen but of all the implements, found in the bluff facing the Delaware River; and it should be remarked that this weathering occurs in this instance in specimens of a different rock, and one of denser texture. The accompanying arrowpoints are of the same material, and all of equally rude workmanship; but their size is such as to render the use of the bow a certainty; and as we cannot safely dissociate the two forms, it is probable that we have in the series traces of a pre-Indian people, which I believe to be the Eskimo. But it is evident, from Prof. Haldeman's letter, that the basis of the island may be glacial drift, and the surface soil, which lately concealed this deposit, may be a deposit of same character as the soils that I have described as overlying the Delaware valley gravels. In such a case, the ruder inter-glacial and better finished post-glacial forms may here be associated by the freshet referred to, which, while washing away the soil, left a portion of the gravel and ordinary arrowheads upon the now denuded surface. If such be the case we have in the Susquehanna valley, also, traces of inter-glacial man; if not, we have, at least, indications of the presence of a post-glacial people, which, as I believe, occupied the valley of the Delaware for untold centuries prior to the advent of the Indian.

In conclusion, I re-affirm my conviction, that in the specimens of artificially chipped pebbles, from the essentially unmodified debris of the terminal moraine in Central New Jersey, and in others found upon the surface (which, however, are in part only of more recent origin), it is shown that the occupancy of this portion of our continent by man extends back into the history of our globe, in all probability to even an earlier date than the great ice age; and that the maximum severity of the climate during that epoch displaced but did not destroy him; and that subsequently he tenanted our sea-coast and river valleys, until a stronger and more warlike race drove him from our shores.

Note.—It may be desirable here to add that as the final proof of the above report was passing through the author's hands, he received a letter from Mr. Thomas Belt, dated Grant, Colorado, June 29, 1878, in which he states that he has "made a discovery that may throw some light not only on the question of man's existence in the Glacial Period, but on that of his physical structure. I have found a small human skull in undisturbed loess, in a railway cutting, about two miles from Denver, near the water-shed between the South Platte and Clear Creek. All the plains are covered with a drift deposit of granitic and quartzose pebbles, overlaid by a sandy and calcareous loam closely resembling the Diluvial clay and the loess of Europe. It was in this upper part of the drift series that I found the skull. Just the tip of it was visible in the cutting about three and one-half feet from the surface."

REPORT PEABODY MUSEUM, II. 17.

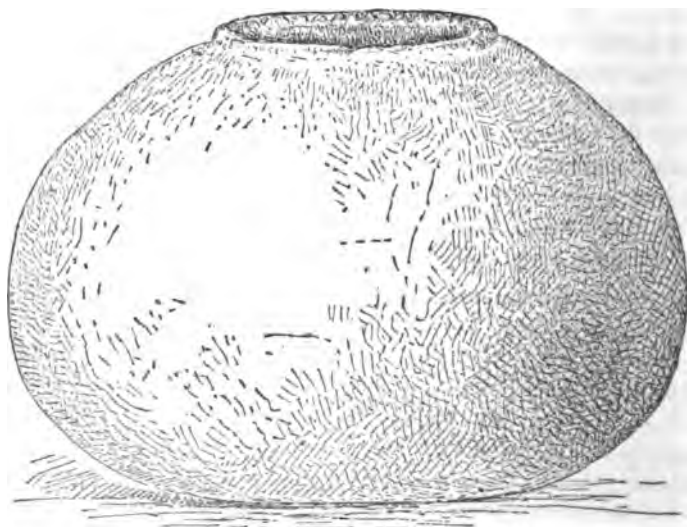
THE METHOD OF MANUFACTURE OF SEVERAL ARTICLES BY
THE FORMER INDIANS OF SOUTHERN CALIFORNIA.

BY PAUL SCHUMACHER.

I. THE STONE POT, OR *Olla*.

IN my investigations among the remains of the aborigines of the Pacific coast, south of San Francisco, I was always rewarded by finding the *olla*,¹ one of the most beautiful utensils of genuine aboriginal workmanship. The pot is usually of globular form with a narrow opening on the top, sometimes pear-shaped, and others of the Mexican form with a wide opening. Illustrations of the main

Fig. 1.

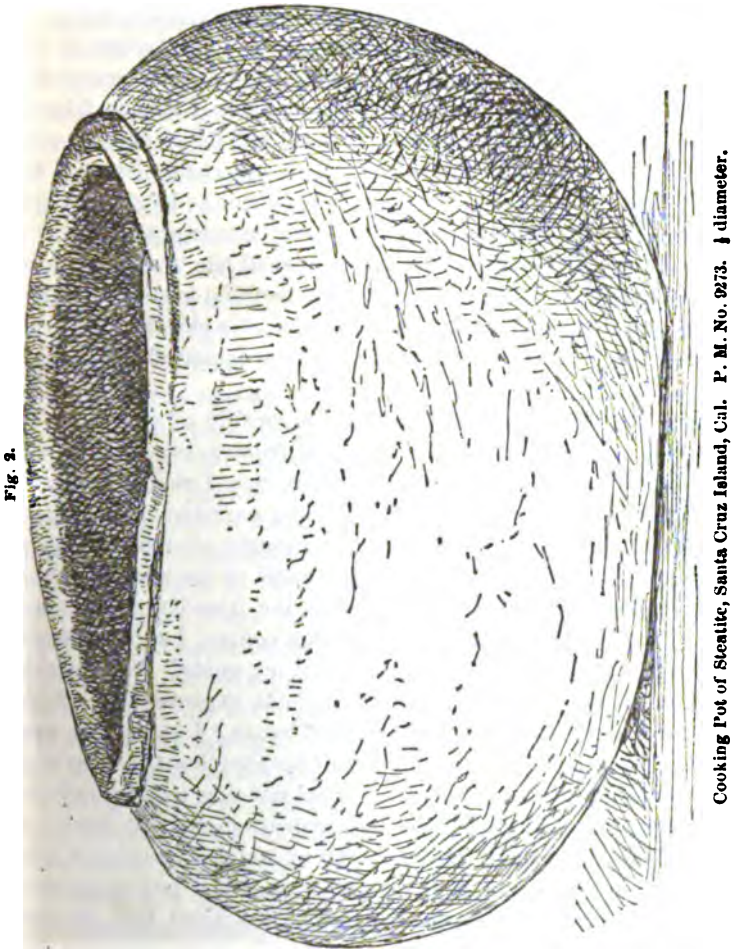


Cooking Pot of Steatite, Dos Pueblos, Cal. P. M. No. 9202. $\frac{1}{2}$ diameter.

types are found in Bancroft's "Native Races of the Pacific States," Vol. IV, page 693, from my own drawings; and in Rau's "Archæ-

¹ *Olla*, Mexican pronunciation *ôya*, from the Latin *olla*, pot.

ological Collection of the National Museum," page 36, from collections made by me two years ago. [Figures 1 and 2 represent two common forms of these pots, drawn from specimens in the Peabody Museum, collected by Mr. Schumacher.—F. W. P.]



The stone of which this utensil for culinary purposes, and some other articles of our Indians, were worked out, has been well known and in use for like purposes since the classic times of Theophrastus and Pliny. The Magnesian stone (*μαγνητικὸν λίθον*),

and the kind quarried at Siphnus and Comum—the *lapis ollaris* of a later period—of which, in ancient times, vessels were hollowed out in the turning lathe, and carved, coincide in nature and composition with the potstone of our Indians. The stone is steatite, and is usually of a greenish gray color, sometimes showing hexagonal prisms in stellated groups, with pearly lustre and greasy touch, especially when reduced to powder. It changes in some portions of the same ledge into a more flaky and micaceous character; while in neighboring deposits on Santa Catalina Island, it exists crystallized in stellated groups of well-developed hexagonal needles of glistening apple color, which are easily detached from the weathered surface. The living rock is not as bright or shining as are the fragments of pots that have been exposed to heat; it loses its greasy character the more a utensil has thus been in use, and the color is changed to a bright metallic lead color. Some years ago I showed a potsherd, the color of which had thus been changed by fire, to a mineralogist, who pronounced it Magnesian mica.

The first information I gained of the locality of quarries of potstone, or where pots were made, was from a venerable Spanish lady while exhuming in Nipomo rancho, San Luis Obispo county, in the spring of 1874. She recollected a narrative of her mother, according to which the Indians had brought *ollas* in canoe-loads from the islands in Santa Barbara channel to the mainland, which they exchanged for such necessities as the islanders were in want of. Two years later, in Santa Barbara county, I received similar information from an old Mexican, then my guide. While making researches among the islands, at the joint expense of the Smithsonian Institution and the Peabody Museum,² I gained the assurance, during my short stay on Santa Catalina, that the stone exists in certain places on that island, but did not then succeed in finding the quarries. But during my last expedition to that locality, in behalf of the Peabody Museum, and of which an outline is given in my prefixed letter, I made the discovery, found pits and quarries, the tools used and unfinished articles. I noticed that the softer stone, usually obtained in pits, which is of a more micaceous character, was used for pots, while the close-grained rock of darker

² "Researches in the Kjökkenmöddings of the coast of Oregon, and of the Santa Barbara Islands and the adjacent mainland." Hayden's Geog. and Geol. Survey, Bulletin, Vol. III, No. 1.

color, serpentine, was mainly used for the weights of digging sticks, cups, pipes, ornaments, etc.

While in camp at Little Springs, my attention was first arrested by a small mound of silvery hue, which same hue also extended over the adjoining ground. The mound is in front of a large outcropping rock of potstone, which I found to be an impressive witness of the tedious labors of the aborigines, it being entirely covered with marks where pot-forms had been worked out or left in various stages; some even were only begun and abandoned, while others were nearly worked out in rough outlines but still united with the living rock. At the foot of the bluff is a burrow in which, and among the *débris* forming the mound, many potsherds, a broken pot of which the outside had already been well worked, and even the hollow started, and a pot-form as broken from the mother rock, were brought to light, with many tools of hard slate in shape of chisels, and scrapers of quartz.

From the Little Springs we followed the cañon to the northward, and crossed the pass, easy of access from this side, into Pots Valley. It is a wide hollow cañon in which potstone, silicious slate and "float"-quartz are found abundantly. The potstone is found especially below the small spring, which makes out near the base of a very conspicuous, isolated, large rock, which stands nearly in the centre of the valley; while the slate, of which the chisels are made, crops out boldly, higher up, near the pass. Several hundred yards below the spring at the ravine to the right, going down, is found a pit; and the ledge of potstone close by forms a face in the ravine, which shows the same marks of the chisel as at Little Springs. About eight distinct marks cover the lower face, while others are obliterated by subsequent mining. One, having only been commenced, shows the outlines of a pot-form in a circle worked to a depth of only an inch, and measures sixteen inches in diameter. Between this place and the second ravine about fifty yards to the northwestward, is another pit of larger dimension—about fifteen feet in diameter and still five feet deep—where, too, among the *débris*, potsherds and quantities of slate fragments and quartz are found, some of which had evidently been used in working the mine, and making the pots. Besides these places there are many more pits in the valley, and a quarry especially prominent about four hundred yards to the eastward from Pots Valley boat landing, close to the steep ocean shore. In

fact, on entering the cañon by the pass, as we did, when the grand rock near the spring, the lesser cliffs and the scattered boulders can be overseen, I was struck, on examining the locality through a field-glass, by the discovery of so many silver hued mounds, the débris

Fig. 3.

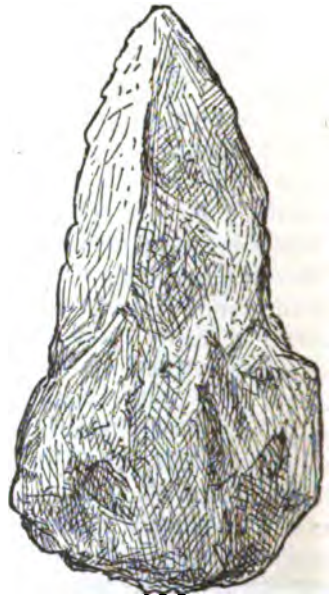


Rude Chisel of Slate used in making the steatite pots. P. M. No. 13411.
 $\frac{1}{4}$ diameter.

of pits, the rock quarries and open air workshops, so that I believed I had found the main factory of the *ollas* of the California aborigines. Even those not interested in aboriginal remains cannot fail to notice the manufacturing propensities of the people that formerly roamed here, and the locality was appropriately named.

In examining the slate quarry I found

Fig. 4.



Rude Scraper of Quartz, used in making steatite pots. P. M. No. 13412.
Actual size.

the rock had been first broken into accidental shape and size, and such pieces best adapted for chisels were then selected and trimmed.

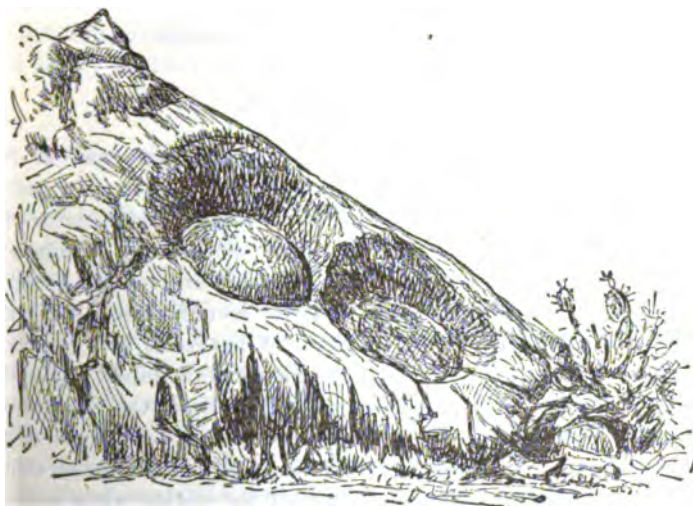
The scrapers, usually made of milky quartz, found in abundance all over the island, are sometimes quite well chipped, but oftener simple flakes.

I will mention here that we detected among the chisel-marks on the living rock, as also on several potsherds, distinct signs of metallic tools having been used. These were probably of iron and like those which we frequently found in the burying-ground on the Isthmus.

Figure 3 illustrates a chisel of slate, half its natural size, and figure 4 a scraper made of quartz, of natural size.

Figure 5 represents a part of the bluff near the boat landing,

Fig. 5.



Ledge of Steatite, Santa Catalina Island, showing the method of detaching and shaping the pots.

and will give a better idea of how the rough work of detaching the rock was carried on.

After the pot-form had been worked out, it was broken from the living rock by working under it and by the gradual pressure of the chisel around the base. The detached pot-boulder was next rounded into proper form; it was then hollowed out until a certain thickness of the pot was reached; and finally, carefully finished with the scraper. As the thickness of the *olla* increases towards the bottom—it usually thickens from about half an inch at the rim

to one and a half at the bottom—it requires skill to attain this evenly. No mechanical apparatus was used for this purpose (as shown by certain irregularities in the form of the pot) but simply the touch of both hands in antiposition, one gliding outside the already finished surface while the other worked inside towards the guiding hand. In this wise, with some practical experience, a greater accuracy is attainable than at first might be supposed, especially if the work proceeds from a known thickness to which reference can be taken, which is here the case as it progressed from the rim.

A new pot is without polish, and has only the smooth surface imparted by the scraper; while those which had been in use attained frequently a polished surface by wear, which the soft and greasy nature of the potstone is inclined to adopt.

II. THE MORTAR.

On the southwestern shore, near the southeast end of San Clemente island, where a fair landing exists, we found a station prominently located on a shallow dune, about a mile below what is known as Chinese Point. To this place large numbers of beach-worn boulders of basalt of different sizes were brought, mostly such as were suitable for the manufacture of mortars which were here largely made. Some of the rocks were broken in the rough state, in the attempt to split off a section of the globular mass, to make a flat surface on which to begin the excavation; others, of a more convenient semi-circular form, bore marks of the chisel as, in one instance, a circle outlining the intended size of the basin; some broke in the hands of the worker while working out the basin, and one, we found, was abandoned on account of a flaw in the rock. The work of shaping the stone was first done with the hammer, consisting of a piece of hard rock, generally of quartz, of about a pound in weight, with sharp edges and points. Persistent and well directed blows with such a hammer, applied either directly with the hand or attached to a handle, will detach even large pieces with sufficient accuracy to give a rough form, if the tendency of cleavage is properly taken into consideration; while the more exact form, and a smoother surface, is worked in the way the serrated hammer of the modern stone cutter is directed, vertically against the face. The basalt rock, al-

though very hard, is of a crumbling nature and will granulate easily under a pointed hammer. We found, therefore, but few chisels in the workshops of Clemente island, and these were evidently applied more for working out the basin, when the hammer could not conveniently be used. When the mortar is made of sandstone, which, instead of being brittle like the basalt, is soft and more adhesive or tough, I believe the chisel was used to a greater extent, and this is indicated by the sharper peck-marks.

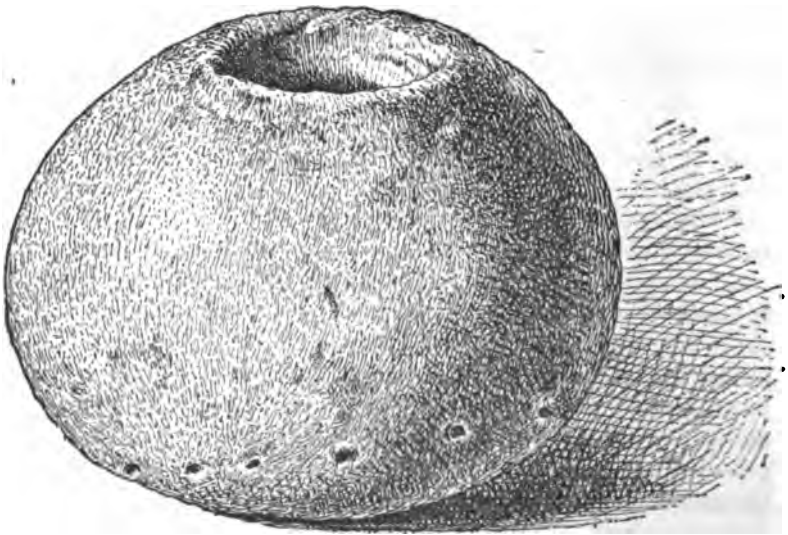
Judging the progress of work by the advance of a single stroke of the hammer or chisel, I am of the opinion, a neat mortar of common dimensions—twelve inches in diameter—should not have required more than a week's work; and for a pot even less time should have been consumed by a skilled worker, not allowing for the detachment of the pot-form from the living rock which must have nearly doubled the time.

III. WEIGHTS FOR DIGGING-STICKS.

These implements, — as are so many others that have a hole, a notch, or other means of fastening a line, — are often considered as sinkers. One of the less frequent types of net sinkers, indeed, resembles the weight for a digging-stick, but yet there is as much difference between the two as between a mortar and an *olla*. The sinker is of a different material; is coarsely finished; the hole is much smaller, and narrower in the middle; and is hardly ever drilled, or finished by drilling, but simply pecked. My first impression, on finding these perforated stones, was that they were the heads of war-clubs, to which those of a pear-shape especially seem to answer. By examining a large number of fragments, however, I found most of the stone-rings had been broken in two, parallel with the hole, which could not be caused by the side pressure of the club, but by a wedge-like action against the inner sides. The suggestion that these stones were weights for digging-sticks, such as are still in use among the Hottentots, I received from an aged half-breed, while working on Santa Cruz island, two years ago, and I have since become convinced that such was their use. If we examine a stone-ring which has done some service, we find the hole shows a polish and fine striæ running lengthwise, and wear on one end of the ring imparted by the hand while in use and

in carrying the digging-stick where it naturally would rest, with its projecting stone weight, against the hand. I found some of the weights thus deeply worn, and by mounting one on a proper stick it fitted nicely to the grasped hand. I also noticed a specimen, among the many sent to the Peabody Museum, in which the hole had been enlarged in full width but in one direction only—making an elliptic hole—worn by the digging-stick while worked, when its own weight could only act against the sides of the stick corresponding to the flattened ends of the wooden spade. There were two methods by which the hole in the stone was made, both of

Fig. 6.

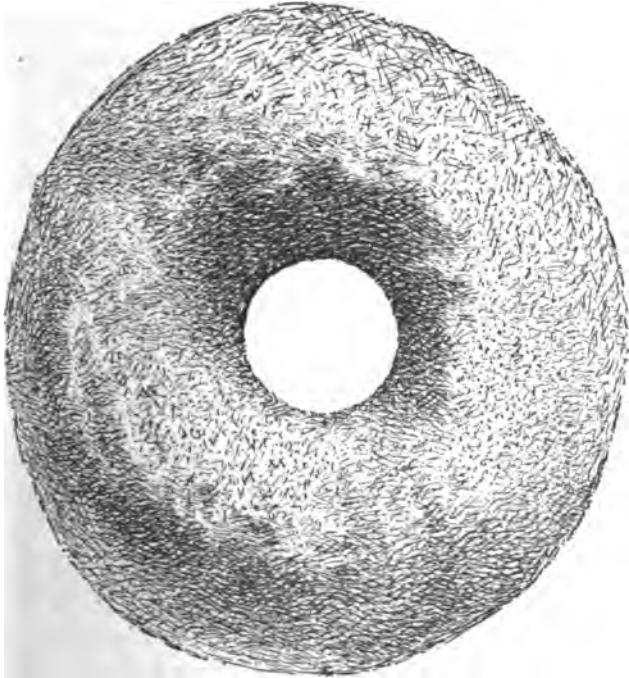


Weight for Digging-stick from Santa Cruz Island. P. M. No. 9296. Nat. size.

which are illustrated by numerous specimens in the collection. In one instance the weight,—almost exclusively of steatite, but occasionally of a harder stone,—was first roughly worked into the desired ball or a more flattened disk; the hole was then chiselled from both sides until it met; it was then drilled out to an equal width throughout; and the weight was finally finished by working the outside in a symmetrical form. The more elaborate weights, however, were finished in outline before the hole was bored. The hole

was made, no doubt, with a flint point, the *striæ* are deep and the width of an unfinished hole decreases towards the centre. A drilling apparatus might have been used, for the streaks of the drill are well defined and in full circle, which could hardly be attained

Fig. 7.



Weight for Digging-stick from San Nicholas Island. P. M. No. 9353. Nat. size.

by turning the borer simply between the hands. Figures 6 and 7 represent two common forms of these weights.

Among the weights for digging-sticks we find many of small sizes and inferior make, which could not have been of any practical use for this purpose and often deviating so much in form as to make it doubtful if they were designed as weights. The same deviation from the practical size we find sometimes among mortars—not meaning the paint-cups—the pestles, and frequently among the *comales* (the flat stone plates for baking *tortillas*) which were formerly extensively in use, judging by the many specimens col-

lected. Such articles we may safely bring under the head of children's playthings, in whose graves they are usually found.

IV. PIPES.

Very little need be said of the manufacture of this article which has been, in the form common on this coast, a mysterious thing to many, and was usually classed among the nondescripts of the medicine-man, wherewith, it was thought, he practised deception to sick believers. The pipe is a funnel-shaped tube like a thick, enlarged, modern cigar-holder, with an opening usually over an inch in diameter at the large end, and narrowing to one-third of an inch towards the other, which has a corresponding decreased thickness.

The hole was drilled from both ends, but only to a short distance from the smaller, and the mouth of the pipe was then enlarged by scraping parallel with the longer axis. For a mouth-piece, which protrudes about an inch, a piece of a wing, or leg-bone, of some bird, was inserted and tightly secured with asphaltum. The pipe was usually made of steatite and is sometimes neatly finished.

The Klamathls of the present day use a pipe of similar form to those found in the graves, and still smoke the native tobacco, *Nicotiana quadrivalvis*, which I found to be a sickening narcotic. It amused me to see an Indian bending back his head to bring the pipe in a vertical position, so as not to lose any tobacco, while taking a long draught which he inhales, the longer to enjoy the short opportunity, as the pipe must be passed on.

CAVE DWELLINGS IN UTAH.

BY DR. EDWARD PALMER.¹

ABOUT eighty-four miles east from St. George, at Johnson, Kane Co., Utah, there is an exposure of soft sandstone in which are many natural caverns.

Owing to the rapid decay of the rock, the openings of many of these caves have been closed by the fall of the roof, and much labor would be required for their proper exploration. Many of those that are still of easy access are now used by the Pah Utes as storehouses for their seeds, corn, and other articles. Such as were so used could not be explored without the risk of bringing trouble to the settlers on the return of the Indians. Another difficulty in exploration was owing to the sheep and goats which resort to the caves for shelter, the cave from which the articles were obtained having the floor covered to the depth of two or three feet by the droppings of these animals.

The cave explored was located about two and a half miles from Johnson. It was ten feet high, thirty feet wide at its mouth, and extended about the same distance into the cliff.

Water is convenient to these caves, and they were evidently used as habitations in ancient times, and even by the present Indians when planting or gathering crops from the adjacent land.

The cave explored had already been partially examined by Mr. H. A. Martin, who stated that he had found "two balls of yellow yarn, and a piece of cloth about the thickness of flannel; also two pieces of wood, each about twelve inches long, flat on one side and rounded on the other, with rounded and smooth edges."

¹On page 199 I have given a general statement of the explorations of Dr. Palmer in Southern Utah. Among the notes accompanying the specimens are many of interest and value, but as they would require Dr. Palmer's revision to prepare them all for publication, and as he has already published similar observations in connection with his papers in the *U. S. Agricultural Report*, and in the *American Naturalist*, I have thought it advisable at this time simply to abstract from the notes such as relate to the articles found in a cave, as they are of special Ethnological interest.—F. W. P.

The articles obtained from the débris on the floor of the cave, which was removed to the depth of two or three feet, after clearing away the droppings of the animals, were as follows:—

A fine specimen of an earthen cooking pot (Mus. No. 12,132) covered with a baking stone (12,134), and filled with one hundred and nineteen small coils of strong and well preserved string (12,133), probably made of the fibre of *Apocynum cannabinum*, and such as are used by the present Indians for various purposes. Each piece of string is between seven and eight feet in length.

This pot is not of Pah Ute make but probably of Moqui origin, and like those found in the mounds in Utah and in the ruins of the cliff houses.³ The small slab of stone protecting the contents of the pot shows signs of contact with fire, and was probably used to bake the thin wafer-like bread, in the same manner as the Moqui Indians do at this time.

Another vessel of pottery (12,140) was also found at a depth of about three feet. This is shaped like a small jug, with a handle on one side extending downwards from the lip of the jug. It is of smooth and reddish clay, well made and symmetrical, four inches high, and about the same diameter through the centre; bottom rounded; mouth one and a half inches in diameter. Over this vessel, and protecting it, was about half of a bowl (12,141) of the characteristic shape and style of ornamentation of the Ancient Pueblo pottery.

Fragments of other vessels (12,139) of the same colored pottery as the bowl were also found.

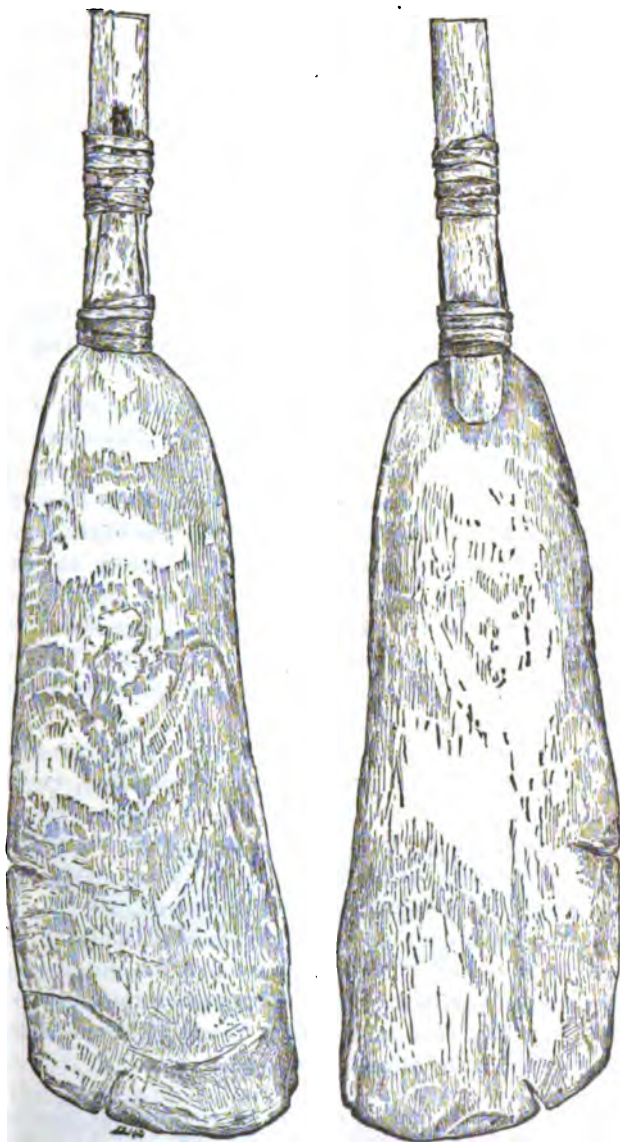
Wooden Tongs (12,135), fastened by a band, from the leaf of some *Yucca*. Similar tongs to these are used by the Apache Indians in gathering the fruit of the cactus. The Indians hold the fruit in the tongs in one hand, and with the other brush off the slender spines with a bunch of grass.

Tongs like these are also used to take any hot article from the fire, and are particularly serviceable in transferring heated stones from the fire to the baskets in which food is cooked by their heat.

Hair brush (12,277). This brush is made of the stems of grass

³ This vessel, which is seven and one-half inches in diameter and seven and three-fourths inches high, is of the peculiar form made by coiling the strip of clay from the bottom to the top, and leaving the edge of the coil projecting on the outside, like the clapboards on a house, while carefully uniting and smoothing them on the inside. A large vessel of this character has been figured by Mr. HOLMES, plate 13, fig. 1, from the Mancos Cliff houses. Bull. U. S. Geol. Geogr. Sur., Vol. II, No. 1, 1876.—F. W. P.

Fig. 1.



Shovel with blade of Horn. from a Cave in Utah (12142). Blade 14 inches long, 5 inches wide. Handle 5 feet long.

tied with fibres of a species of *Agave*, and is like those used by the Moqui, Pah Utes, Navajos and Apaches.

Fragment of roasted leaf of a species of *Agave* (12,136). The leaves of the *Agave* are used by the present Indians as an article of food.

Pine cone (12,137). The seeds of cones of this species are used by the Indians for food, and this was probably carried to the cave for that purpose.

Several Corn cobs (12,138).

A small Basket (12,113) similar to those made by the Moqui Indians, and unlike those made by the Pah Utes.

All the articles above mentioned were found in the débris of the floor of the cave as stated, and are well preserved, owing to the dryness of the cave.

Perhaps the most interesting thing obtained was a shovel (12,142) which was found under large rocks, covered by débris, and evidently had been long buried in the cave. Figure 1 represents a front and back view of the blade, showing the method of its attachment to the long wooden handle. The blade is made of the horn of a mountain sheep, the horn evidently having been steamed and flattened, the pointed end being the portion fastened to the handle by sinews. The blade is five inches wide, fourteen long, and not quite one-fourth of an inch thick. The wooden handle is five feet long and of a nearly equal diameter of one and one-fourth inches throughout.

Altogether the implement is a very handy one for use in a light soil, and would prove of great service in planting, cutting up weeds, ditching, etc. Several old Indians of different tribes have told me of such implements having been used for agricultural purposes before they obtained iron tools. They stated that the blades were made of horn, bone, or stone, and, by the outlines they would draw on the ground, they showed that the general shape of the shovels they described was like this interesting and probably unique specimen.³ On showing this implement to some old Pah Utes, they said at once that it was of Moqui make, and was used to make ditches and plant corn.

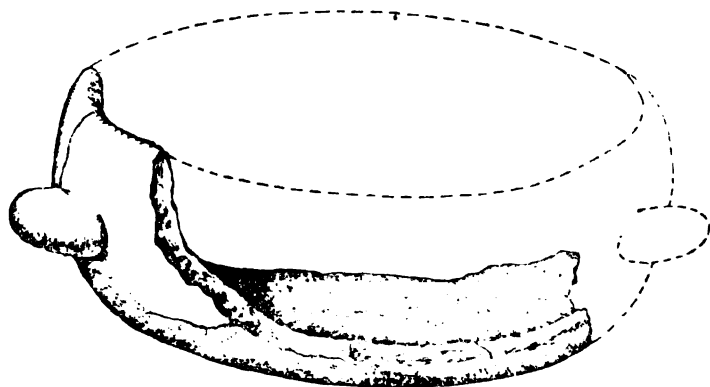
³The general shape of the blade of this shovel is very much like that of the large stone implements which have generally been called "hoes," and it is probable that while some of these implements may have been mounted for use as hoes, others were affixed to handles, similar to this blade of horn, and used as shovels.—F. W. P.

THE MANUFACTURE OF SOAPSTONE POTS BY THE INDIANS OF NEW ENGLAND.

BY F. W. PUTNAM.

THROUGHOUT the Eastern States, vessels made of soapstone have been found and are represented in most collections. They are, generally, more or less oblong in shape, rather shallow, and provided with two knobs, or handles. In fact, the term *dish* would probably convey a better idea of their shape than the term *pot*, though the latter is applicable, as they often bear evidence of having been in contact with fire and were undoubtedly used for the preparation and cooking of food.

The accompanying figure, representing a portion of one of these



PORTIONS OF A SOAPSTONE POT FROM AN INDIAN GRAVE IN SALEM. 1.

vessels from Massachusetts, illustrates the common form of these pots, though there are numerous variations in size and shape.

That these utensils were made in large number is evident, and while it is very probable that many of the surface exposures of steatite were worked by the Indians, the actual existence of such

working places on the Atlantic coast is only known to me at two localities.¹ One of these I mentioned in the Report of the Museum for 1875, page 16, wherein is recorded a collection of "Rude stone implements and fragments of soapstone pots, from near Christiana, Lancaster Co., Penn.—Presented by Mr. S. P. Sharples." In connection with this entry it is stated that these rude implements were probably used in shaping the soapstone pots; and, from information given by Mr. Sharples, it appears that a quarry of this stone exists at the place where the implements were found, which is said to have been resorted to by the Indians of recent times for the purpose of making utensils of the stone.

In connection with the preceding description, by Mr. Schumacher, of the method of manufacturing the soapstone pots on the Santa Barbara Islands, the discovery of a similar ancient quarry, showing an identical method of getting out the stone by the Indians of both sides of the continent, is of interest.

For the opportunity of making an examination of this second eastern locality, I am indebted to the interest taken by Prof. J. W. P. Jenks of Brown University, who, as soon as he heard of the discovery, informed me of the fact and arranged with the proprietor of the place, Mr. H. N. Angell, of Providence, for my visit. Mr. Angell very kindly accompanied Prof. Jenks and myself to the quarry, and allowed me to take such specimens as I desired for the Museum.

This ancient quarry consists of a seam of steatite about twenty-five feet wide, which, at the time of my visit, soon after its discovery, in February, 1878, had been exposed for about ninety feet. The seam of steatite is bordered on each side by a hard slaty rock, and, at certain places, the steatite runs into the associated minerals. Its location is on Mr. Angell's land, known as the "Big Elm Tree Farm," about a hundred yards north of the Killingly Pike, in the town of Johnson, near Providence, R. I. About a hundred yards to the west of the ledge is a fine mineral spring, and the locality must have been one of constant resort by the Indians.

The seam of soapstone was completely covered by the soil that had accumulated over the ancient chippings, and was discovered by the workmen after removing many cart-loads of the pulverized rock. In clearing out the ancient quarry, over three hundred cart-

¹ Since this article was put in type, I have seen a notice, in the *Boston Advertiser* of July 15, of a third ancient quarry recently discovered in Virginia, about thirty miles southwest of Richmond, on the Richmond and Danville Railroad.

loads of *débris* of the manufactory were taken away, and this *débris* consisted almost entirely of the fine particles of soapstone which had been chipped off in the process of taking out the pot-forms from the mother rock. When this material had been cleared away the peculiar character of the surface of the rock at once attracted attention, and then notice was taken of the fragments of pots and the large number of roughly pointed stones that were lying about and bearing evidence of having been used.

At the time of my visit, many of these rude chisels had been carted a few hundred yards distant to fill up a low piece of land, and others had been thrown in a pile on the ledge. A careful estimate of the number convinced me that at least two thousand of these rude stone chisels had been found on the ledge, or in the immediate vicinity. They were all of nearly the same size, rudely chipped to a blunt point at one end, and roughly rounded to fit the hand at the other. Those brought to the Museum vary in length from five to eight and one-half inches, and in weight from one to four pounds; the majority being of about seven inches in length and from two to three pounds in weight. These chisels were made from the hard stone of adjoining ledges, and their manufacture must have required considerable labor. A short trial of the chisels upon the soapstone showed the facility with which the *steatite* could be pecked by these rough implements, and what patience combined with muscle would accomplish.

Associated with the stone picks, or chisels, were between seventy-five and a hundred large rounded stones, weighing from twenty-five to a hundred or more pounds each, which might have been used as hammers for the purpose of breaking off large masses of the soapstone.

The bed of *steatite* had been excavated its full width, and nearly all its length and depth as far as at present exposed. The remains of the circular and oval masses, that had been broken off from the sides of the ledge, showed that the seam of *steatite* was formerly from six to twelve feet deep; the whole of this mass of rock having been worked out and probably made into utensils.

Several fragments of pots were found in the *débris* of the ledge, evidently broken during manufacture, and also several unfinished pot-forms just as detached from the matrix; while on the ledge itself the pot-forms could be followed out through their various stages of development.

The method of procedure in getting out the mass from which the utensil was to be made was identical with that described by Mr. Schumacher, as followed by the California Indians. The outside of the vessel being roughly shaped and the stone cut away to the required depth, the mass was broken off, the detached surface hollowed out and the outside more carefully finished. In the eastern specimens, however, we do not usually find such a smooth and perfect finish as noticed in the Californian pots.

In one part of the ledge, where an impure seam of harder material has divided the workable steatite, a limited area is formed, which enables an estimate to be made of the number of pot-forms taken out. These forms, as shown by the remaining portions, were from six to twenty-one inches in diameter. On the walls and floor of this limited space, fifteen feet long, eight wide, and six deep, were evidences of the removal of sixty pot-forms. As many as three or four hundred pots had probably been made from the material taken from this part of the ledge alone, and several thousand must have been taken from the whole ledge, which suggests that these vessels were in considerable demand, or that the place had been long used.

The fact that soapstone vessels, of the peculiar shape and character of those made at this ancient New England manufactory, are widely distributed east of the Mississippi River, though more common in the New England States than elsewhere, may be one of the many indications of aboriginal trade.

I am indebted to Prof. Jenks for a beautiful series of photographs of this interesting Indian quarry, and regret that I am unable to reproduce the one showing that portion of the ledge which I have particularly mentioned, as containing the evidence of sixty masses of stone having been removed.

Among the specimens, now in the Museum, is one consisting of a mass of the ledge showing the remains of one of the pot-forms, which well illustrates the method of work, and with this are placed the rude chisels, and a few fragments of pots which were probably broken in the course of manufacture, for all of which the Museum is indebted to Mr. Angell.

NOTES ON A COLLECTION FROM THE ANCIENT CEMETERY
AT THE BAY OF CHACOTA, PERU.

BY JOHN H. BLAKE.

In 1836 the writer visited and made a careful examination of the ancient cemetery in Southern Peru, situated near the shore of the Bay of Chacota, about a mile and a half in a southerly direction from the town of Arica, in Lat. $18^{\circ} 30' S.$, Long. $70^{\circ} 13' W.$

This Cemetery is on a plain, the soil of which is composed of fine silicious sand, marl and gypsum, impregnated with common salt and nitrate and sulphate of soda. The graves and tombs occupy a large extent of ground, in two distinct places, about an eighth of a mile apart. They are marked in some instances by small circular mounds made up of pebbles and shells, or by circles of rounded stones laid loosely on the surface; but, for the most part, only by slight depressions in the soil over them. They all bear marks of fires having been kindled over them, as shown by the fragments of wood, coal and ashes on the surface and within the interstices of the piles. In form they are all circular, but vary in size from three to five feet in diameter, and from four to five feet in depth. Some of them are walled with water-worn stones, laid up loosely, and all have linings of coarse flag mats.

At the time referred to, it was found that a great number of the graves had been opened and despoiled of their contents, probably in search of the precious metals occasionally found in them. Numerous skulls and other human bones, associated with fragments of pottery, were scattered over the surface of the ground. Many graves, however, remained intact, and a number of these were carefully opened and their contents examined. These in some respects were very similar, but in details there was found a wide difference. All the bodies, excepting those of infants, were in a sitting posture, with the knees elevated and the arms crossed over the breast, and generally seated upon flat stones, under which were placed many of the articles interred with them. They were closely wrapped in woollen garments, and the outward

edges of the folds were sewed together with yarn, and in every instance the thorn needles, used for this purpose, were found thrust through the enveloping garments, often with pieces of yarn remaining in the eyes.

Fig. 1.



MUMMY OF A CHILD FROM PERU, IN ITS WRAPPINGS. (13037.)

Of the larger part of these bodies little more than the skeletons remain. Some appear to have been subjected to careful desiccation, while others, the flesh of which is permeated with resinous substances, are well preserved.¹

¹ It is interesting to note that the bodies from Ancon, in the Museum, are not permeated by the resinous substance, like those here mentioned by Mr. Blake and those from Pisagua collected by Mr. Agassiz.—F. W. P.

There are no traditions connected with this particular cemetery, or similar ones in this neighborhood, and the present inhabitants of the country, of Indian origin, evince no respect for them, although not wanting in those sentiments which lead them to view with horror the desecration of the last resting places of those whom they consider their kindred.

Fig. 2.



MUMMY OF A MAN FROM PERU. (13038.)

Figures 1, 2, and 8 represent three mummies from one of the tombs, or walled graves, referred to, selected from among those which were evidently intact, and in the best state of preservation.

Figure 1 represents a body (13037) from which none of the coverings have been removed, and presents the appearance of all

of those which are in a good state of preservation. It is closely wrapped in woollen garments, outside of which, around the head, is wound a thread, having attached to it small feathers of various colors. The inclined position, toward one side, of the head and legs, is doubtless due to the pressure of the superincumbent sandy soil upon the body while it was soft and flexible, there being no arch, or other covering, to bear the weight or prevent the soil from filling the tomb, except the reeds and mats laid over the bodies within it. It is evidently the body of a young person, probably not more than twelve or fourteen years of age.

Figure 2 represents the body of a man (13038) from which a part of the garments belonging to it have been removed, exposing to view the head, part of the breast, and one hand. With the

Fig. 3.



CAP FROM MUMMY, I. (13037.)

exception of a part of the integuments of the lower jaw, the body is in a good state of preservation. The flesh is soft, of a dark brown color, and has a strong and peculiar odor which pervades the clothing, and is plainly perceptible throughout the whole cemetery. The head is of the rounded form (brachycephalic) with a somewhat retreating forehead; the cheek bones are high, and the nose prominent. The hair is long, of a brown color and of

the ordinary fineness of that of Europeans. It is neatly arranged

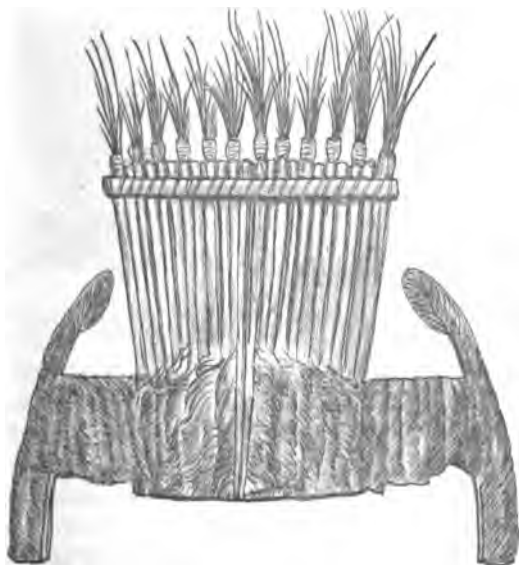
Fig. 5. and braided; that on the front part of the head having been carried backward and formed into two rolls, one on each side, and that on the back part into a triangular plait made up of six braids.

The following are measurements of parts of the body which were accessible:

Length of the ulna, 10 inches; of tibia, 16.5 inches; of hand, 7.5 inches; of middle finger, 4.5 inches. The breadth of the part of the hand formed by the metacarpal bones is only 2.5 inches.

The outer covering of this body is a woollen garment of a brown color and comparatively fine texture, and a hood of similar material, with black, brown and yellow stripes, was drawn over the head, the edges in front stitched together, and, at the bottom, to the other garment. Over this was a cap (13039), Fig. 3, also of woollen threads, of various colors, closely and ingeniously woven, surmounted with a tuft, Fig. 4, made up

Fig. 4.



FEATHER ORNAMENT FROM CAP. 1.

ARROW FOUND
WITH MUMMY. 1.

of twelve small bunches of feathers, and in front an ornament

formed of quills of the condor. [Not now in the collection]. Around the cap was a woollen cord about eight feet long (13111), the outer part of black and yellow threads neatly woven around a central core. A smaller cord made of hair, attached to its lower edge, served to keep it in place when tied under the chin, as shown by the bow-knot connecting the ends. There was also around the cap a thread with small feathers of different colors, and a single flint arrow-head attached to it (13040), as shown in Fig. 3.

Secured to the back by a hair cord, and also by stitches to the outer covering, was a quiver [not now in the collection], containing five arrows [four are now in the collection] (13041), the heads

Fig. 6.



SILVER ORNAMENT FOUND WITH MUMMY. 4.

are of stone and the shafts, which are in two parts, are about two feet long; one of these arrows is represented in Fig. 5.

Suspended by a flat belt, passed over the shoulder, on one side, was a bag (13042) containing leaves of Coca (*Erythroxylon Coca*) and a thin silver medal. The belt, or band, by which the bag was secured, is woven and of fine yarn in handsome

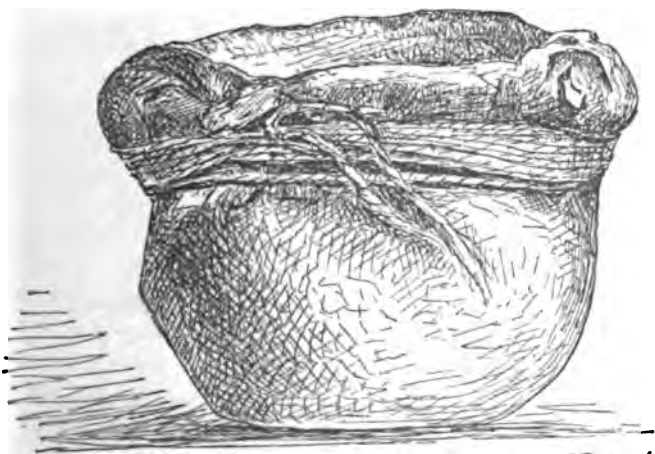
black, white and brown figures, with a border of red on one side and brown on the other; it is two and a half feet long and over an inch wide. The bag, measuring seven by eight inches, is very handsomely and evenly woven of fine yarn, in black, white and brown stripes, and the edges are very curiously and tastefully sewed together with red, yellow, blue and white thread.

The silver medal, or ornament (13043), Fig. 6, found in the bag, is three and a half inches in diameter. A space in the centre,

three-fourths of an inch in diameter, is countersunk on one side, and in the centre of this there is a small round hole; there are also indentations on one side, all around, near the edge. A triangular piece about three-eighths of an inch long is wanting to render the circle complete, but this may have been broken off accidentally. The medal is very thin and brittle from oxidation. A hair cord, about two feet long, is attached to it, by which it may have been suspended from the neck.

Upon removing the cap and hood there was found, beneath the chin, a small earthen vessel (13044), Fig. 7, about two inches in diameter, the top of which had been closed by a membrane, part of which, with the string which fastened it around the neck, still remains attached. It is not improbable that this cup contained

Fig. 7.



CLAY VESSEL FOUND WITH MUMMY. Natural size.

originally a liquid, and this may account for the condition in which part of the lower jaw, before mentioned, was found, and it may, perhaps, also account for the oxidation of the silver medal. Such a liquid would most likely be *Chicha*, an acid drink, prepared by fermenting roasted maize, which has been known from time immemorial in Peru.

Figure 8 represents the body of a female (13045), from which all the wrappings have been removed. The fleshy parts of a dark

brown color are soft, and the joints slightly flexible. For its preservation the same means evidently were used as for the preservation of the body which has just been described. The following are measurements of parts of the skeleton :

Fig. 8.



MUMMY OF A WOMAN FROM PERU. (13045.)

Length of humerus, 9 inches ; of ulna, 8 inches ; of hand, 5.5 inches ; of middle finger, 3.5 inches ; of femur, 13 inches ; of tibia, 12 inches ; of foot, 7.7 inches.

The breadth of the hand in the widest part is only two inches, and that of the foot only two and a half inches.

From the ankles to the knees the legs are coated with red paint, and there are marks of the same pigment on the hair of the head. The head resembles in form that of the body last mentioned. The hair upon it is fine, of a light brown color, and when first exposed was smooth and neatly arranged in braids passed across the upper part of the forehead, then carried backward and secured on each side of the head above the ears. It is somewhat coarser and much shorter than the hair on the head of the man.² This body, like the one represented in Fig. 1, when first found, was closely wrapped in woollen garments. On the outside a cord was passed several times around it, and one also between the outer covering and that nearest within it.

Upon removing the outer covering there were found beneath it the following articles:

A wooden comb (13046), much worn, with hair adhering to the teeth.

A pair of sandals (13047), about five and a half inches long and two inches broad, painted red.

Three needles of thorn (13048), about three inches long, tied together.

Two balls of yarn (13049), one of them colored green and very tender, the other white and strong.

A small package of shells, *Littorina Peruviana* (13050).

A bladder containing red pigment (13051).

A small package of *Rutile* (13052).

A bladder containing a gum resin (13053), similar to that obtained by treating a part of the flesh of the body first described, with water and afterwards with alcohol.

A pod from an *Algaroba* tree [not now in the collection].

Two mussel shells, *Mytilus* (13054).

Several locks of human hair (13055), some of them rolled with leaves of coca.

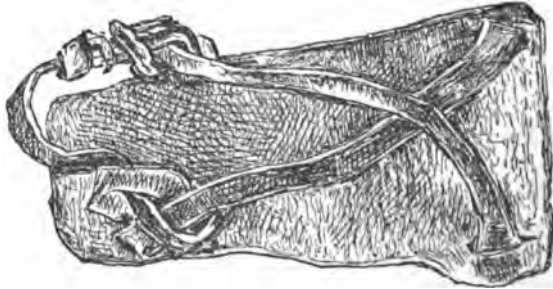
On removal of the inner garment, the body appeared as shown in Fig. 8, with impressions of the cloth upon the flesh particularly about the face.

In the same tomb there were the remains of an infant (13056), carefully wrapped in a black woollen cloth (13057), and enclosed in the skin of a penguin [not now in collection], with the feather

² Among many Indian tribes it is a custom when a relation dies for the women to cut short their hair. The men sever only a lock or two.

side inward. Attached to the inner wrapper was a pair of sandals, Fig. 9, about two and a half inches in length (13059). Between the wrappers were several small rolls of cotton (13060), also rolls of hair of the *Vicuna* (13061), with leaves of coca, two mussel shells (13062), and several small shells (13063) of the kind before mentioned. The infant was dressed in a garment of brown cloth (13058). The head was partly covered by a loose cap (13064), lined with a wadding of cotton and hair covered with red paint. Within it was a large lock of soft human hair (13065) on which the head rested; also, folded in a small piece of cloth (13066), and tied with care, was a brown thread (13067) with seven knots [only one knot now left] in it,³ and on one end what appears like,

Fig. 9.



SANDAL FROM MUMMY OF AN INFANT. Natural size. (13059.)

and probably is, a part of the umbilical cord (13068). Around the neck was a green cord [not now in the collection] with a small shell attached to it. Of this body, little more than the skeleton and the scalp, which is thickly covered with very fine dark brown hair, remain. The appearance of this and many similar bodies of infants, found in this and other Peruvian cemeteries, shows that no efforts were made for their preservation, at least no other than, perhaps, by desiccation.

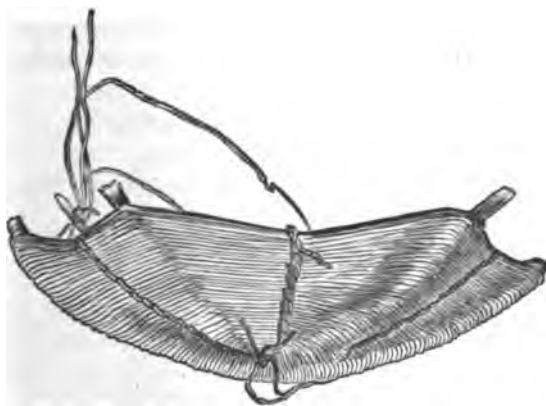
A foetal body (13069), in its wrapper (13070), was also found

³ Probably a *quipu*, *quipps* or *quippo*, used for arithmetical purposes, and, also, as aid to the memory by way of association, by the Peruvians. The custom of preserving a part of the umbilical cord is common, if not universal, among the western tribes of Indians of North America.

in this tomb, and it is particularly deserving of notice that, in many others, foetuses were found preserved as carefully as the body of the infant just described.

Besides the articles before enumerated, there were found in the tomb, a package of coca done up in a brown cloth (13073), and a number of woollen bags, of various patterns and sizes, some of them containing maize (13071) both ground and unground, and others leaves of coca (13072). Several of these bags are of fine and even texture with ingeniously woven figures of various patterns and colors. Many of them are much worn and have been neatly repaired. Each bag is made of a single piece of cloth, woven of the exact size required for the purpose for which it was intended, and this remark is applicable to every article made of cloth

Fig. 10.



WOOLLEN THREADS ON A FRAME, $\frac{1}{2}$. (13076.)

which was found in the cemetery. The fabric is generally evenly woven, often fine and soft, of threads dyed with durable colors consisting of two or more strands. The sewing is generally strong, uniform and often ornamental. One of these bags contained a long cotton cord [not now in the collection] formed of nine strands evenly twisted together and as uniform throughout as if made by means of modern machinery. It is noticeable as being almost the only article made from this material which was found.

Another bag (13074) of fine texture, differing in pattern from the rest, contained five locks of human hair (13074), and a

single bead formed of *Chrysocolla* (13075). This hair is fine and does not appear to have undergone any material change of color; it is of several shades of brown in all the locks excepting one, which is black.

Fig. 11.



SPINDLE
WITH WHORL
OF STONE, $\frac{1}{4}$

If, as some have supposed, the hair on the mummies, now brown, was originally black and had changed by age, why should not this lock of black hair have changed also?

Other articles found in the tomb were:

A piece of unfinished work (13076) of woollen threads of various colors, upon a rude frame made of twigs; this is shown in Fig. 10; with it there were a thorn needle with a piece of thread still in the eye (13077), and three balls of yarn (13078). From its having been found in connection with the body of the woman, it is not improbable that it is a piece of work upon which she was engaged a short time before her death.

Similar pieces of unfinished work (13079) were found in other tombs; for what they were designed is unknown, possibly for caps like the one which has been described.

Several spindles and distaffs (13080) of wood, and one of wood and stone (13081) were found; one with a stone whorl is represented by Fig. 11. These simple instruments for spinning by hand are in common use at the present day, and weaving is still done, to some extent, by Indian women who have no knowledge of the loom; the warp being held by stakes driven into the ground and the woof inserted under and over the threads by means of a long wooden needle.

The only articles of metal found in this tomb, beside the silver disc before mentioned, were two knives of copper alloyed with a small percentage of tin, each formed of a single piece of metal, with the handles in the middle of, and at a right angle to, the blade; in one of them (13082), Fig. 12, the end of the handle represents the head of a *Llama*. The blade of the largest (13083), Fig. 13, is two and a half inches long and five-eighths of an inch wide; the

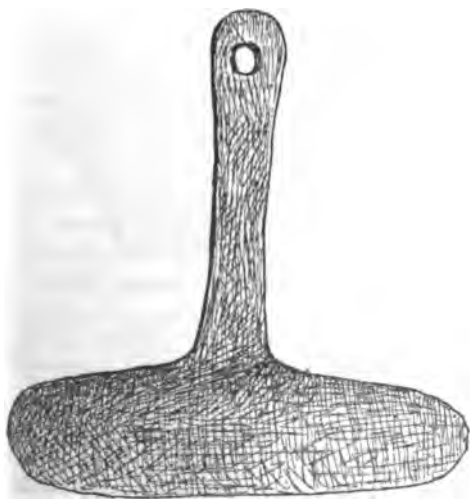
handle measures two and a half inches from its end to the edge of the blade.

There were three combs (13084) similar to the one before mentioned, one of these is represented in Fig. 14. The teeth, each of which is formed of a separate piece of hard wood, are bound together between two semicylindrical pieces of wood, by thread.

Several ears of corn or maize (13085), of a peculiar kind. The receptacle is remarkably small, the grain long and cylindrical, and the farinaceous portion nearly free

from oil. All efforts to make it vegetate have proved unsuccessful.

Fig. 13.



13.083

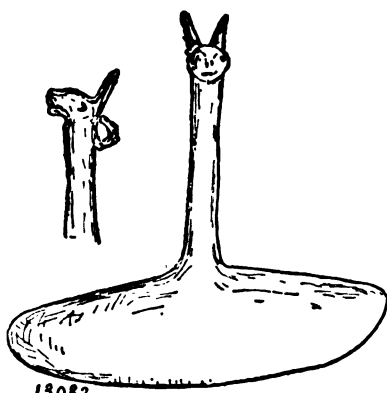
BRONZE KNIFE FROM ANCIENT GRAVE, PERU. Nat. size.

pointed at the end as if for insertion in a reed (13092).

Two peculiar articles made of small sticks bound together by

REPORT PEABODY MUSEUM, II. 19.

Fig. 12.



13082

BRONZE KNIFE FROM ANCIENT GRAVE, PERU. Natural size.

A thorn needle with an eye (13086), and a thorn (13087) such as the needles were made of.

A small pointed stick (13088) showing marks of fire.

Six pointed sticks of various sizes and shapes (13090), and five larger pointed sticks of different shape (13091).

Three knives, or possibly arrows, Fig. 15, actual size, made of stone and fixed in short wooden handles, or shafts,

Fig. 15.



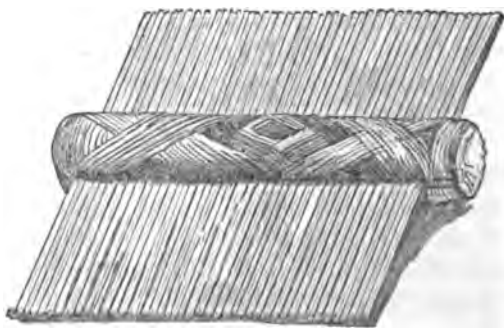
cross cords in a peculiar manner (13093), Fig. 16.

Two small open-work baskets made of split reeds (13094), Fig. 17. Small and beautifully made basket of reeds (13096), Fig. 18.

A piece of unfinished work (13095), like that described on a preceding page and represented by figure 10. Foot of a bird prepared in a peculiar manner (13097), somewhat like a bottle with a wooden stopper (13089).

A small twig bound with fine thread and having the appearance of a miniature bow (13098), perhaps a child's plaything.

Fig. 14.

COMB FROM ANCIENT GRAVE, PERU, β . (13084.)

Two lots of wool of the *Vicuna* (13099).

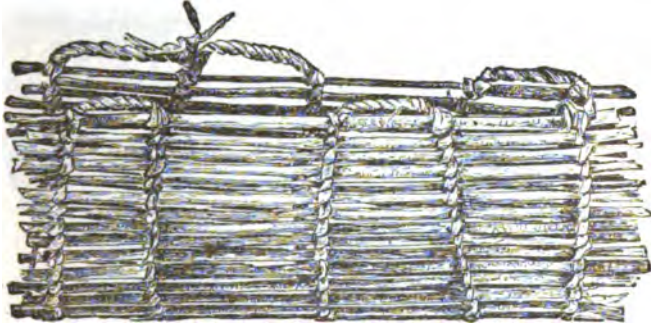
A small gourd bottle (13100) ornamented about the mouth.

Beside the articles enumerated, there are a number of earthen vessels, of which several are represented in the following figures, both glazed and unglazed; some are plain and others are ornamented. They were moulded by hand without the aid of a potter's wheel.

One of them (13101), Fig. 19, rudely represents a bird; similar vessels have been

found unbroken, which, when filled with water and rocked forward and backward, emit a sound not unlike the note of a bird.

Fig. 16.



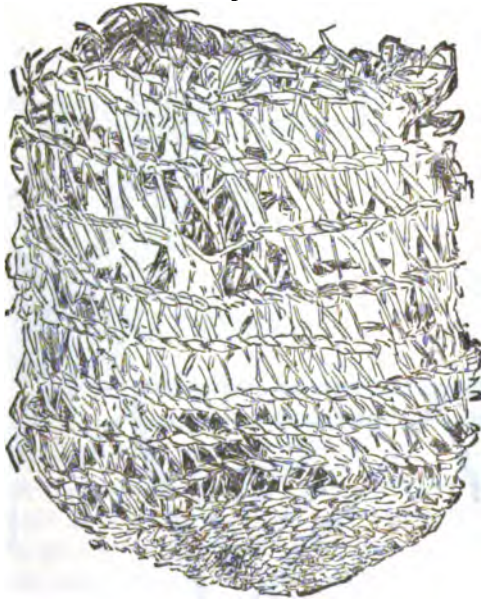
STICKS BOUND WITH CORDS, FROM ANCIENT GRAVE, PERU, 4. (13003.)

Figure 20 represents a beautiful jar (13102), in which the bowl part is supported by the head and horns of a deer.

Another symmetrical and beautiful vessel (13103) of clay, is that represented by Fig. 21. Still another vessel (13104) of the same general character of pottery, but not so symmetrical, is shown, of natural size, in Figure 22.

These several examples of ancient Peruvian ceramic art, are made of fine clay and well finished. The ornamentation is in black and white paint on a red ground, or as in the case of Figure 22, black and red on a brownish ground.

Fig. 17.

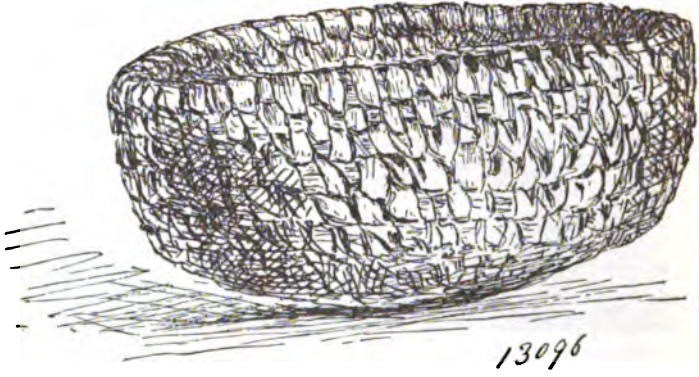


BASKET FROM ANCIENT GRAVE, PERU. Nat. size.
(13004.)

An interesting clay bowl is shown in Fig. 23. This bowl

(13107) is well made and carefully finished, and as shown in the

Fig. 18.



BASKET FROM ANCIENT GRAVES, PERU. Natural size.

figure is ornamented on the inside by two black lines of border, under which are represented three birds.

Fig. 19.



CLAY VESSEL FROM ANCIENT GRAVE, PERU, I. (13101.) a, The pattern on the wing, enlarged twice.

Figure 24 represents, of natural size, a peculiar pointed little vessel (13106) of black clay; and Figure 25, also of natural size, a small rudely made pitcher-shaped vessel (13105).

Fig. 20.



CLAY VESSEL FROM ANCIENT GRAVE, PERU, 4. (13102.)

Several other vessels of clay were collected and are with the collection (Nos. 13108, 13109, 13110).

Spherical vessels, such as are represented in the drawings, are used in Peru at the present time for preparing a kind of tea from leaves of coca, which is used for medicinal purposes, and sipped by means of a small tube passed through the hole in the top.⁴

⁴In the arid parts of Peru, such is the nature of the soil and climate that articles which would soon perish in a humid atmosphere are here, after the lapse of centuries, found perfectly preserved. The burial grounds afford the largest number of interesting relics, which evince strong feelings of attachment and regard for the dead on the part

The crania found in the cemetery, and the remark applies equally to those found in other similar cemeteries, present two distinct forms, the one rounded and the other elongated. Those

Fig. 21.



CLAY VESSEL FROM ANCIENT GRAVE, PERU, 1. (13103.)

of the bodies described are of the former shape. A large number were collected and brought together, and from them a selection of

of their relatives and friends. It is a common opinion that the custom of burial with the dead of the various articles found in sepulchres, grew out of a belief that they would be useful to the deceased in another state of existence; but it is more probable that it was the result of a feeling, rather than any process of reasoning, by which the living were prompted to invest their relatives and friends with interesting associations in their last resting places.

a few of each kind was made, in order to obtain fair average specimens of each type.

The rounded, *brachycephalic*, crania are small. The occipital

Fig. 22.

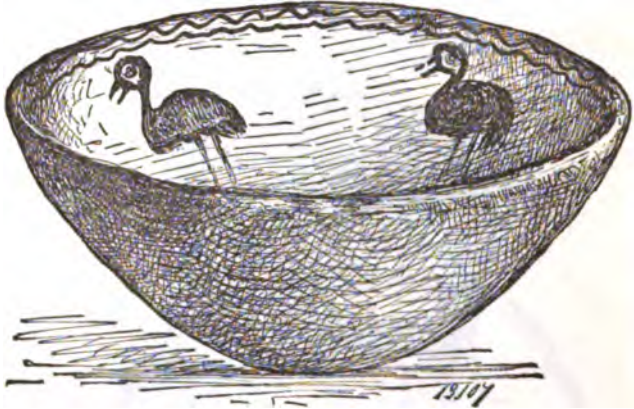


CLAY VESSEL FROM ANCIENT GRAVE, PERU. Natural size.
(13104.)

bone is flat; the forehead retreating, but elevated and broad in comparison with that of the elongated, *dolichocephalic*, crania. The temporal fossa is not remarkably large. When the eye is

directed downward upon these skulls, the occiput being towards the observer, the zygomatic arch is nearly, in most, and entirely, in

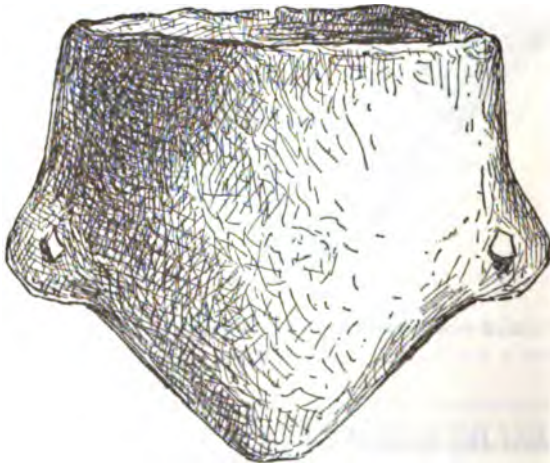
Fig. 23.



CLAY BOWL FROM ANCIENT GRAVE, PERU, 1.

some of them, hidden from the sight. Viewed in the same position, the face is completely hidden by the upper and front part of

Fig. 24.



CLAY VESSEL FROM ANCIENT GRAVE, PERU. Natural size.
(13106.)

the cranium. The orbital cavities are deep, and their margins quadrangular. The bones of the nose are prominent and the orifices large. The alveolar edges of the jaws are obtusely arched in front, and the chin projects on a line with the teeth. The cheek bones descend in nearly a straight, vertical line from the external angular process of the frontal bone. Compared with the elongated

Fig. 25.



CLAY VESSEL FROM ANCIENT GRAVE, PERU. Natural size.

crania the face is small, and its outlines more rounded. The following are measurements in inches, from four which were selected as fair average specimens of this type.⁵

Longitudinal diameter.....	6.	6.3	6.6	6.7
Parietal diameter.....	5.2	5.	5.3	5.3
Frontal diameter.....	3.5	3.5	3.4	3.6
Vertical diameter.....	5.2	5.3	5.3	5.4

Of the other type of crania, the elongated, *dolichocephalic*, full two-thirds of the cavity occupied by the brain, lies back of a

⁵The flatness of the occiput, in this type of Peruvian crania, is common with those of the Mexican and many of the tribes of North America, and it is probably due, in all of them, to a custom which still prevails of securing infants to a board or bark cradle by means of a broad flat belt passed tightly around the body from the feet upwards, and over the forehead. The practice of swathing infants among the Peruvians, is universal at the present time. They are first wrapped in a square cloth, a folded corner of which is brought over the forehead and the whole secured in the manner described.

vertical line drawn from the middle of the occipital foramen, and, when laid upon a table, resting on the condyles, the skull falls backward. The forehead is low, and very retreating. The temporal ridges approach near to each other and a large space is afforded for the temporal muscles, between which the skull seems compressed. Compared with those before described, the whole bony apparatus of the face is more developed. The zygoma is stronger and more capacious; the superior maxillary bone is more prolonged in front, and its incisor teeth are in an oblique position. The entrances to the nose are more ample, and the cribriform lamella more extensive. The substance of the skull is thicker, and the weight greater. In these, also, the orbital cavities are deep and the margins quadrangular. In both, the foramen magnum and the other openings for the passage of the nerves are large. The following measurements in inches were taken from three fair average specimens.

Longitudinal diameter.....	7.2	7.3	7.
Parietal diameter.....	5.2	4.9	4.7
Frontal diameter.....	3.6	3.3	3.2
Vertical diameter.....	5.1	4.9	5.1

These measurements average for each type

	BRACHYCEPHALIC.	DOLICHOCEPHALIC.
Longitudinal diameter.....	6.4	7.1
Parietal diameter.....	5.2	4.9
Frontal diameter.....	3.5	3.3
Vertical diameter.....	5.3	5.

Figures 26-29 represent, of about two-thirds their natural size, the skulls of two children, of from five to six years of age, both of the dolichocephalic, or elongated type. One of these (13112), Figures 26, 27, shows evident marks of artificial distortion, and the other (13113), Figs. 28, 29, evident indications of its normal shape.⁶

⁶It is of interest, and of importance, to call attention to the fact that the two crania here described and figured, are the very specimens about which considerable controversy has been held by Drs. Wilson, Davis and Wyman, and are those from which the figures in Wilson's "Prehistoric Man," were taken. The seven other crania mentioned in this article were not received with the collection, but, since this report has been put in type, they have been found at the Warren Museum and the proper order received for their delivery to the Peabody Museum, where they will be placed with the rest of this valuable collection.—F. W. P.

In the former an unnatural ridge is seen near the coronal suture, and the parietal bones bulge out on either side. No similar peculiarities are to be seen in the latter.

The differences which have been shown in the crania are by no

CRANIUM OF A CHILD FROM ANCIENT GRAVE, PERU, ABNORMAL, ♀. (1313.)

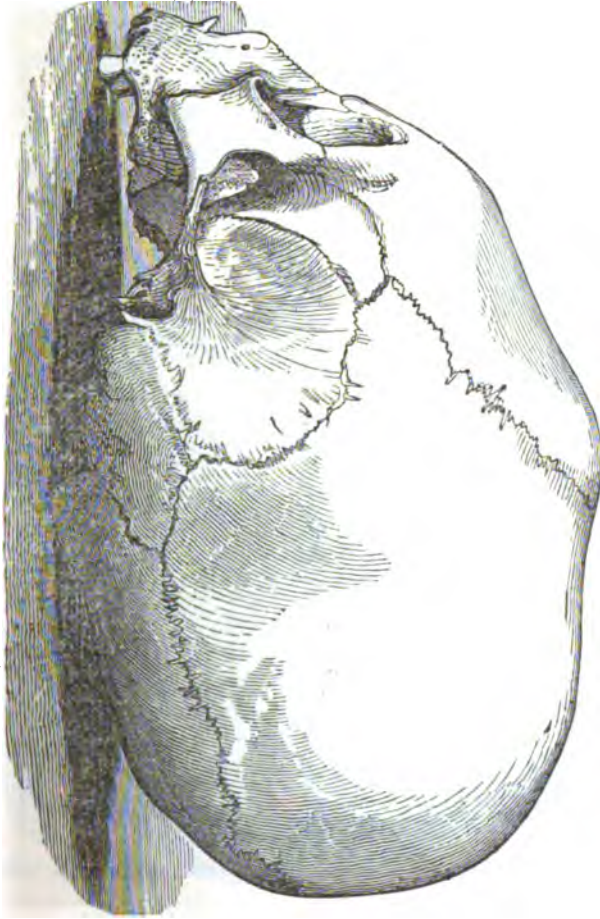
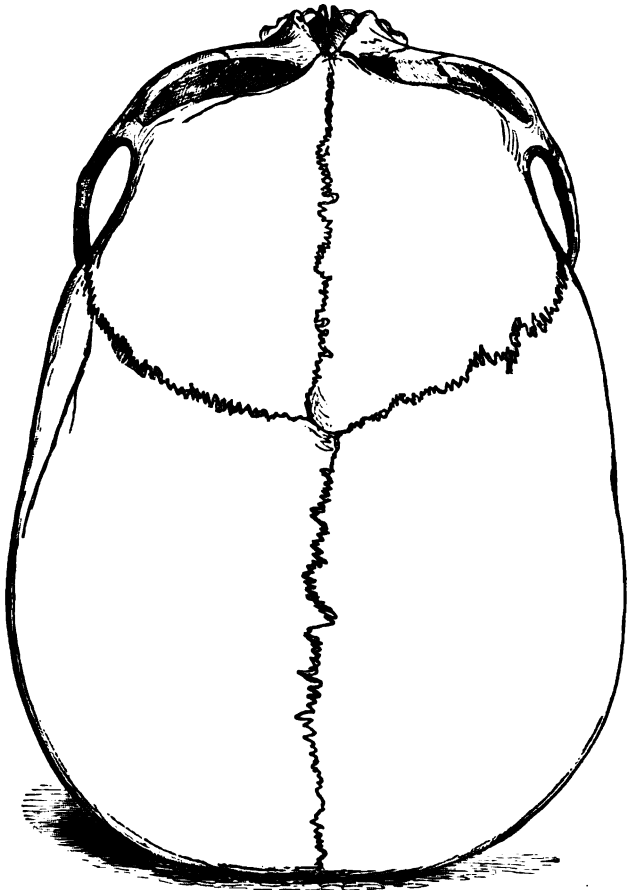


Fig. 26.

means the only differences between the two classes. Other parts of the skeletons when compared show a striking dissimilarity. All the bones belonging to the elongated, or dolichocephalic type of crania, are larger, heavier and less rounded than those belonging to the other, or brachycephalic type, and their processes are more

protuberant;⁷ the hands and feet are larger, and there is every evidence of their general greater muscularity, showing that they were

Fig. 27.



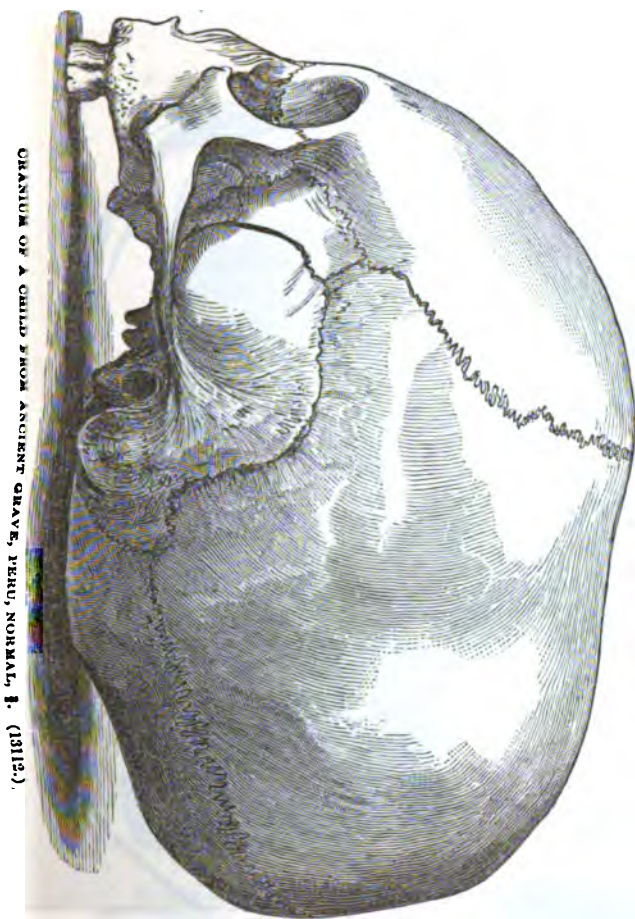
CRANIUM OF A CHILD FROM ANCIENT GRAVE, PERU, ABNORMAL, ♂. (18113.)

fitted for, and accustomed to, manual labor, the reverse of which is indicated by the narrowness and delicacy of the hands and the long

⁷Many distinguished naturalists are of opinion that the two forms of skulls described are representative of one type, the elongation of the one being due entirely to artificial compression. In the two skulls of children referred to, the normal shape of the one appears as evident as does the abnormal shape of the other; and this may be said of a very large number of adult crania which were examined.

and regularly formed finger nails of those to whom belonged the rounded, or brachycephalic crania.

In one of the tombs in the same cemetery, in which were several



CRANIUM OF A CHILD FROM ANCIENT GRAVE, PERU, NORMAL, F. (13112.)

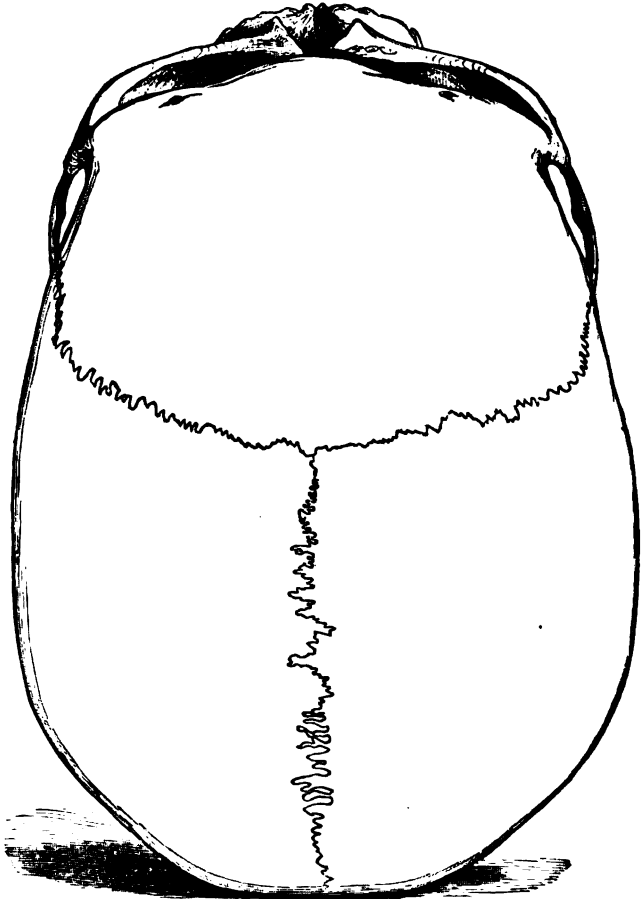
Fig. 28.

bodies, there was found, deposited separately, a well preserved head(13114), Fig. 30, wrapped in a thick cotton hood.⁸ It is in a

⁸No similarly formed head was observed among the many which fell within the writer's observation, and it is the only instance found by him of a head preserved separately. This is the head of which Dr. Morton gives an illustration in his *Crania Americana*, plate 1.

good state of preservation, and this appears due to careful desiccation without the use of resin, or other antiseptic. From the manner in which the skin of the neck is drawn inward over the *allas* and *dentatus*, it is evident that the preservative process was

Fig. 29.



CRANIUM OF A CHILD FROM ANCIENT GRAVE, PERU, NORMAL, ♀. (13112.)

applied to the detached head soon after death. No other separate or similarly formed head was found. In some respects it presents striking points of dissimilarity to any of the crania already described. It is remarkable for its great height compared with

its diameter. Measured from the most prominent part of the frontal bone to the extreme projection of the occiput, it is 6.4 inches; from the most prominent protuberances of the parietal bones, the diameter is 5.8 inches, and vertically, from a horizontal line drawn

Fig. 30.



MUMMIED HEAD FROM ANCIENT GRAVE. PERU. (13114.)

across the centre of the orifice of the ear to the highest part of the head, is 5.2 inches. The forehead is broad and high, the nose prominent, the cheek bones high, the alveola edges of the jaws obtusely arched in front, and the incisor teeth stand in a vertical position. The hair, which is brown, and slightly gray, is remarkably fine with a tendency to curl. It has been neatly braided, and

several of the braids are passed across the forehead, for which purpose they have been lengthened by the addition of false hair, so ingeniously joined as nearly to escape detection. The orifices of the ears are filled with tufts of cotton, and the same are passed through slits in the lobuli. The teeth in this head, and in all the adult skulls examined, including those under middle age, are much worn. The incisors are ground down from their cutting edge to a broad flat surface, and the cuspidati present a similar appearance. Though this condition is very common in the crania of primitive races, it is accounted for among the Peruvians by a habit, still prevalent, of chewing the leaf of the coca mixed with a gritty substance called *llute*, made of the wild potato, calcined shells, and ashes of cacti, or other plants rich in alkali.

ARCHÆOLOGICAL EXPLORATIONS IN TENNESSEE.

BY F. W. PUTNAM.

DURING the month of September, 1877, as stated in my general report (p. 203), friends in Nashville tendered to me such facilities for archæological research in central Tennessee as enabled me to make extensive explorations in several localities, the results of which are briefly recorded in the following pages.¹

My first examination of the ancient stone graves, which are so numerous in the state of Tennessee as to form a marked feature of its archæology, was in the prehistoric cemetery on Zollicoffer Hill. It was soon found, however, that the graves at this place had been so much disturbed as to make any work done here rather unsatisfactory as to results. The building of Fort Zollicoffer on this hill was probably the first cause of disturbance of the cemetery, while its easy access from Nashville has recently led many curiosity hunters to the spot.

One of the graves at this place had been opened by a friend a few days before my visit, and in it he had found the remains of what he believed to be a mother and child. The few bones he collected and kindly gave me, however, showed conclusively that

¹Prof. JOSEPH JONES in his elaborate and interesting work, "Explorations of the Aboriginal Remains of Tennessee," Smithsonian Contributions, No. 239, 1876, gives much valuable information about the archæology of the state, and describes and figures many articles found in the graves. In this report I do not intend to enter into a discussion of the facts, but simply to give the results of my own explorations in Tennessee. This limitation is also advisable for the reason that large collections, made under my direction, have been received from the state since the close of the year covered by this report, which will be referred to in the next Annual Report. I must, however, state that it was most gratifying to me on reading Prof. Jones' work, which, though dated 1876, was not received at Cambridge until October, 1877, after my return from Tennessee, to notice how our similar explorations had led to the collection of nearly identical material, and the corroboration I had obtained of many of the facts which Prof. Jones has so well presented; although, as would be expected from two persons having nearly identical material in hand, but looking upon the evidence furnished from different stand points, I am forced to differ from him in some of his conclusions, particularly so in regard to the evidence of syphilis prevailing in this old nation of Tennessee. Undoubtedly very many of the human bones show the results of disease, but it may be that the disease was not syphilis, and that other diseases affect the bones in a similar manner.

while those belonging to the adult had been long buried, and were probably those of the body for which the grave had been made, those of the infant were on the contrary of a much later date, and were evidently of a child that, not many years ago, had been placed in this old grave, which was near the surface and formed a handy place for burial. This fact is mentioned simply to show the caution with which such examinations must be made in order to secure trustworthy results.

One grave which I opened at Zollicoffer Hill, though only a few inches under the surface, had escaped former disturbance. This grave was formed of six slabs of stone on one side and five on the other, with one slab at the head and one at the foot; forming a grave five feet eight inches in length, inside measure, and six feet outside. The average width being eighteen and the depth sixteen inches. The side stones were unevenly broken to dimensions of eight to fifteen inches in width, by about twenty inches in depth and two, or three inches in thickness. The two stones forming the head and foot of the grave were larger than those on the sides. All these stones extended a few inches below the floor of the grave, which was made by placing thinner and smaller pieces of stone in such a manner as to form a level bottom to this cist. Five slabs of stone, larger than those used on the sides, rested on the nearly even edges of the upright stones, and, slightly overlapping, formed the cover or top of the grave.

Further examinations in other localities showed that all the stone graves were made after this plan, the only variation being in the size of the stone slabs and in the dimensions of the graves. Any rock was used that could be easily detached in slabs of convenient size. That most common to the localities I visited was limestone and sandstone.

In the grave I have described the body had been laid on the back and extended at full length, occupying nearly the whole length of the grave, showing that the person when living was about five feet, five inches in height.

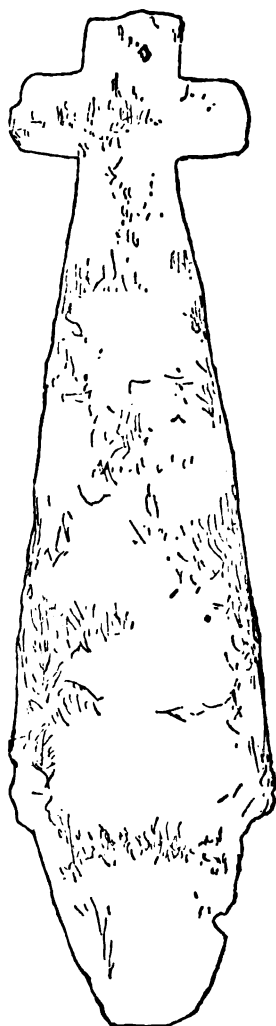
From many measurements of the graves taken during my explorations, I am convinced that the people buried in these stone graves in Tennessee were of ordinary stature. Occasionally a grave seven feet, and even of eight feet in length was found, but in such cases there was always a space of several inches between the bones of the feet and the foot-stone, and between the skull and the head-stone.

In the grave specially mentioned above, the only articles found were fragments of two vessels of clay, which had been placed in the centre of the grave, and a pointed implement made of deer's horn (11830).

In another grave of the same character and about the same size, located by the side of the first, and also with the covering stones in place, the remains of the skeleton of an adult were found, and with it, in about the centre, on one side of the skeleton, were the fragments of an earthen dish. On the breast of this skeleton was the ornament of copper here figured of its actual size (Fig. 1). The cross-like form of this ornament may give rise to the question of its derivation; and had any article of European make, such as glass beads, brass buttons, etc., so common in Indian graves subsequent to contact with the whites, been found in any one of the hundreds of graves I opened in Tennessee, I should consider the form of this ornament the result of contact with the early missionaries; but, from the total absence of articles denoting such contact, I think it must be placed in the same category with the "tablet of the cross" at Palenque, and be regarded as an ornament made in its present form simply because it was an easy design to execute and one of natural conception.²

The ornament is evidently made from a piece of native copper hammered and cut into shape. The small perforation at the upper border still contains a fragment of the string by which the article

Fig. 1.



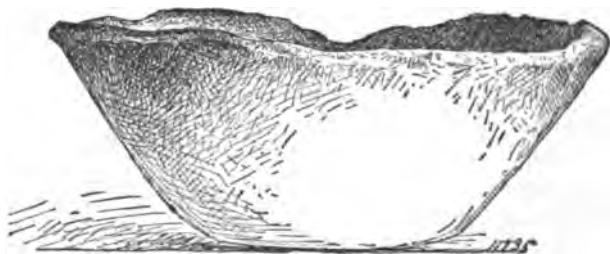
11832

Ornament of Copper,
from grave on Zollicoffer Hill.
Natural size.

²Prof. Jones mentions finding the cross represented in several instances upon articles of shell and of copper found in the graves he examined, and has discussed the question of its origin. *I. c.*, p. 77.

was suspended, preserved by the action of the copper; and on one surface of the copper are slight evidences of its having been in contact with a finely woven fabric, thus showing that this ancient

Fig. 2.

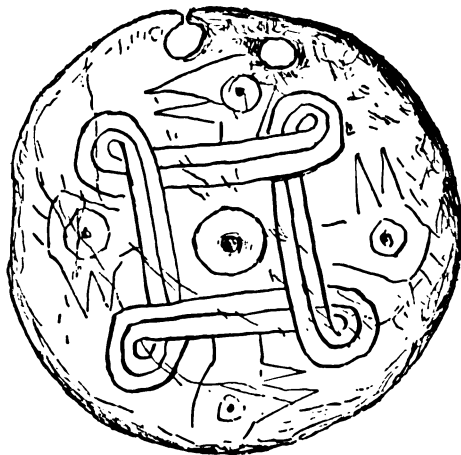


Dish from grave on J. M. Overton's place. 4.

people, who were well advanced in the ceramic art, also possessed the knowledge of weaving.

On the large estate of John M. Overton, Esq., eight or nine

Fig. 3.



Ornament of Shell from grave on J. M. Overton's place. Natural size. (11817.)

miles south from Nashville, there was formerly an extensive cemetery, and many graves are still to be found about the hill on which stands Mr. Overton's hospitable residence, known as the "Traveler's Rest." At this place Prof. Joseph Jones obtained many of the articles which he has described and figured in his valuable work.

It was my good fortune to receive the kind attentions of Mr.

Overton during a short visit to this interesting locality, and thanks to Mrs. Overton, and her gardener, Mr. Edward Cross, I was made the recipient of several very valuable specimens which had

been taken from graves on the place, and also had an opportunity to open two graves myself, from each of which I secured pottery, and from one a cranium.

One of the articles of pottery (11835) is here represented, of one-half of its diameter (Fig. 2). This is a well-made, rather thick dish, without ornamentation, and was found by the side of the skull.

A short time before my visit, a stone grave was removed by Mr. Cross, and in it were found two interesting articles which he gave to me. One of these is a highly polished discoidal stone, two and a half inches in diameter and one and one quarter thick, made of white quartz (11818); the other is the shell ornament here represented, of actual size (Fig. 3).

This ornament is made from a large marine shell, probably a *Busycon*, and is symmetrically carved on the slightly concave surface as shown in the figure.

The four heads of birds, resting on the rectangular central figure, are represented by simple incised lines. Two holes near the edge of the disk indicate that the ornament was suspended.³

Mr. Cross also gave me a spear, or arrow-point of jasper with serrated edges (11819), which is represented, of actual size (Fig. 4). This flint-point was found while cultivating the land in the vicinity of the graves, and with two polished celts (11816), presented by Mrs. Overton, were probably once enclosed in graves which had been destroyed in former years.

In connection with the shell ornament found in the stone grave

Fig. 4.



11819
Flint-point from Mr. Overton's place. Natural size.

³Since this was sent to press there has been received at the Museum from Mr. E. Cartiss, half of a shell disk found on the surface in Humphreys Co., Tenn. This shell disk has carved upon it figures identical with those on the one described above from Overton's farm. The two localities are between 70 and 80 miles apart and at both places the number of stone graves indicate large settlements. Can these carved shells be regarded as totem? Several distinct patterns are now known, of each of which two or more examples have been found.

on Mr. Overton's place, I give the following illustration (Fig. 5) of a similar ornament (11801) which was given me by the venerable Col. J. D. Morgan, of Nashville, in whose possession it had been for some time. Col. Morgan was not certain that this ornament was taken from a stone grave, though the probability is that it was so found in the immediate vicinity of Nashville. This disk is made from the shell of *Busycon*, and is larger than the one given me by Mr. Cross. Figure 5 represents this ornament,

Fig. 5.



Ornament of Shell from Nashville. 1.

of one-half its diameter, and will give a better idea than words of the design carved upon it. Like the other, it has two holes for suspension.

Prof. Jones has described and figured (p. 43, figs. 7 and 8) a shell disk, found in a stone grave on the banks of the Cumberland, opposite Nashville, the carving on which is identical in

its design with that on the one here figured, the only difference being in the number of circles in the two groups. In Prof. Jones' specimen the outer ring contains fourteen circles, and the inner nine, while in our specimen there are thirteen and six respectively. The central spiral figure is the same in both.⁴

Many of these carved disks of shell have been found in the graves and mounds of Tennessee and Missouri, and, with the identity of the associated pottery from the two localities, go far to prove the unity of the people, notwithstanding some slight differences in burial customs.

On the farm now owned by Miss Gertrude Bowling, about four and a half miles southwest from Nashville, were five burial

⁴In relation to this central figure Prof. Jones has ventured, on p. 137 of his work, a comparison between what he calls the "Symbolic divisions of the circle by the ancient stone grave race and mound builders of Tennessee," and the "Chinese figure Tae-heih."

mounds, which, thanks to the kind permission of Miss Bowling, were thoroughly explored. Of these, I personally conducted the work on one of the largest, which was about fifty feet in diameter and between five and six in height. A second and part of a third were examined by Mr. Curtiss under my direction.⁵

These five mounds, containing the graves of from six to eight hundred persons, were probably the burial places of a former settlement in the immediate vicinity, all other traces of which had long since been destroyed by the cultivation of the land. Not far from this locality, as I was informed, are the remains of a cemetery where the graves were located on the side of a hill; a well known mineral spring is situated within half a mile of the mounds and a small winding creek is near by. The locality must have been a desirable one for a permanent village and, like all other such sites met with in the state, was well chosen for the natural advantages offered.

In the mound which I explored, over two hundred bodies had been placed, with one exception, in stone graves of various sizes. The single exception of a body buried without the care which was used in all other burials in the mound is of interest, especially as there was no indication that any article had been placed with the body, and while engaged in carefully getting out the skull of this skeleton, I could but feel that it was that of some poor outcast, who had not been considered worthy of a stone grave. The skull of this individual is noted in the table of measurements on p. 224, under No. 11918, and belongs to the ordinary type of skulls from the graves.

The mound itself was formed by several irregular layers or tiers of stone graves, the lowest of which had probably been placed irregularly round the grave first made. These lower graves were formed by making an excavation sufficiently deep to support the side-stones of the grave, but not so as to cover the overlying top-stones, at all events not more than an inch or two. On the graves, offerings of food, etc., probably had been left, which would account for the many fragments of pottery, the several stone implements and other articles found upon the covering stones, and by the sides of the graves.

Below several of the graves, near the centre of the mound, and

⁵ Major Powell and his party explored the other mounds.

as nearly as could be determined on the original surface of the ground, was a bed of ashes several inches deep, in which fragments of pottery and a few bones of animals were found. In at least two of the mounds near this, corresponding beds of ashes were noticed. Over this bed of ashes were several graves, the stones of which they were formed extending but a few inches into the ashes, thus showing that these stone graves were often formed above ground. After these early graves were covered by a few inches of soil, a second tier was placed above them, and eventually this was followed by a third and fourth.

At the highest point on the mound, a few graves were found, which, though nearly destroyed by the growth and falling of trees, probably belong to the latest, or fifth tier of graves.

Over the mound was a recent growth of trees, the largest of which was a black walnut, standing on the very centre with its roots reaching down the sides of the mound and penetrating some of the upper graves. This tree was eight feet four inches in circumference at its base, and seven and one-half feet, at a height of four feet; but, as a section of the trunk only showed between sixty-five and seventy rings of growth, the tree is not of value in estimating the age of the mound, for it is historically known that this region was without Indian inhabitants one hundred and fifty years ago, and, uncertain as we are as to the period when they were constructed, it is certainly safe to state that the mounds were not made after that date.

The mound, formed in the method stated, by the gradual accumulation of the stone graves, was conical in shape, as each irregular tier of graves had a smaller number than that below it. The lower graves were thus, of course, the oldest, though there was little difference in regard to the condition of the bones, and the contents of graves side by side in any of the layers were in entirely different degrees of decay.

It was noticed that no method was followed in placing the head of the body in any particular direction, though in the lowest tier the majority were placed with the head towards the centre of the mound, but even among these oldest graves one was occasionally found at right angles to that adjoining. In the upper layers, the graves were placed in all directions, sometimes one would be found lying lengthwise directly over a grave below it, and others were resting crosswise upon two, three or even four graves in the

tier below. It was particularly noticed that without regard to the proximity of other graves, each was constructed perfectly independent of those adjoining, notwithstanding the fact that the side or head stones of adjoining graves were often in contact. Generally, however, there was a space of about six inches between the graves, and often the space was one or two feet.

The following transcript of my field notes, for two days of the six that I spent with my diggers in examining this mound, will give sufficient details to show the character and contents of the graves in this and the adjoining mounds. In designating the several tiers, the lowest is counted as the first, and so on to the fifth, or most recent. The graves here recorded were principally on the eastern side of the mound.

Grave 1. 1st tier. Inside measure, 6 feet 9 inches in length, 1 foot wide, 9 inches deep. An adult, body extended, lying on back, head to west. Bones of the skeleton very dry. Skull taken out perfect, but fell to pieces in cleaning, pieces saved with all the teeth. Took out long bones, part of pelvis, vertebræ, etc. Fragments of a pot, a broken arrowpoint, and three flint chips in grave. Top of grave covered by four large slabs which projected over the sides.

Grave 2. 1st tier. A child of four or five years, body extended, head to west. Skeleton all gone except portions of left parietal and occipital, several teeth and piece of femur. No article in the grave. Length 3 feet 9 inches, width 11 inches, depth 9 inches. Side rocks extending several inches below the bottom of inside of grave. Two rocks on top.

Grave 3. 1st tier. Grave of an old person, body extended, head to west, 6 feet 9 inches long, 1 foot 8 inches wide. Skull, pelvis and long bones taken out in good condition. Nothing but skeleton in the grave.

Grave 4. 1st tier. Adult, body extended, head to west, 6 feet 6 inches long, 2 feet 2 inches wide. Took out skull in pieces, long bones, fragments of pottery and shell of *Unio*.

Grave 5. 1st tier. This grave, though 6 feet 6 inches long and 2 feet 1 inch wide, was that of a youth or a woman of delicate frame. With the exception of portions of the long bones, the skeleton had nearly decayed. No article in the grave.

Grave 6. 1st tier. 3 feet long, 2 feet 5 inches wide. A young

child, all the bones decayed except the shafts of the long bones of arms and legs. No articles in grave.

The grave of an adult, designated as No. 1, was between the two graves of children, Nos. 2 and 6.

Graves 7 and 8. 3rd tier. These graves were close together, of same size, the indications being that they were made at the same time. Each grave was 2 feet by 1 foot 4 inches, and each covered by a single slab. No. 7 contained bones of an infant in such position as to show that the body had been extended when placed in the grave. Several of the bones in a good state of preservation, and were saved. In this grave found fragments of pottery and a mussel shell.

In No. 8, the bones of the head and body were in a compact mass of 12 by 6 inches, and had the appearance of having been buried in a bundle. In this grave were also fragments of pottery.

Grave 9. 1st tier. 7 feet long. Adult. Long bones, pelvis and under jaw saved. A ring of pottery $1\frac{1}{2}$ inches in diameter resting on under jaw.

Grave 10. 1st tier. That of a child, 3 feet long, 1 foot wide. Part of skull and the long bones saved. No articles in grave.

Grave 11. 1st tier. Adult, 7 feet long. Skull and long bones saved. No sign of pottery or articles of any kind.

Grave 12. 2nd tier. Long grave. Skeleton too far decayed to save any portion. No articles in grave.

Grave 13. 2nd tier. 3 feet 8 inches long, 14 inches wide, 9 deep. A child about five years old. Long bones and under jaw saved. No articles in grave.

Grave 14. 3rd tier. 3 feet long, 9 inches wide, 7 deep. That of a child. Portions of skull and the long bones saved. No articles in grave.

Grave 15. 2nd tier. 7 feet long, 11 inches wide, 6 inches deep. Adult, body extended on back, head to north. Skull, long bones and pelvis saved. The following articles were found in space between the skull and head stone:—

Large spear point and knife of flint; several flint chips; two awls made of deer's horn, and two others made of bone; a shell bead; tooth of a beaver, tooth of a carnivorous animal; wing bone of a bird.

Grave 16. 2nd tier. Next west of 15 and of about the same size, head to north. Long bones and jaw saved. Fragments of pottery.

Grave 17. 2nd tier. Old person, head to west. Skull, long bones, pelvis and other bones saved. Two flint chips in grave. No signs of pottery.

Grave 18. 3rd tier. Small grave containing portions of much decayed skeleton of a youth. Shell of *Unio*, and a flint chip in grave.

Grave 19. 4th tier. On the western side of the mound and the upper tier at this place. The covering stones of this grave had been disturbed. Head to west, feet towards centre of mound. Nothing saved.

Grave 20. 1st tier. In part under Nos. 15 and 16. Youth of about eighteen years. Jaw and arm bones saved. A slender flint drill, fragments of pottery and a few flint chips in grave.

Grave 21. 1st tier. About in centre of mound and running north and south. 6 feet long. Body extended, head to north. Skull saved. No articles in grave.

Grave 22. 1st tier. 6 feet 3 inches long. In same line with 21, and the head stones of the two graves in contact. Head to south. The skull and some of the long bones saved. Flint chips in grave.

Grave 23. 1st tier. Grave of a child, 3 feet 2 inches long, 12 inches wide, 5 inches deep. Head to west. Bones much decayed. None saved. No articles in the grave.

Grave 24. 1st tier. On same line with grave 23. Foot stone of 24 in contact with head stone of 23. Two tiers of graves over 23 and 24, the graves resting on 23 and 24 lying east and west, while those in the upper tier were lying north and south. The position of this grave and the condition of its contents, mark it as one of the oldest in the mound, though on the eastern side of the centre. The grave was very dry and the bones had nearly all been reduced to dust. What remained consisted of a few teeth, a fragment of the femur, small fragments of the tibiae, and portions of the spongy part of a few of the bones. A pipe made of pottery and a few flint chips, were found near the teeth and had evidently been placed near the head.

From these notes it will be seen that from comparatively few of these old graves can either crania or other bones be obtained, and those that are removed require long and patient work. It will also be noticed that very few graves contained pottery or other articles, though this would not indicate any neglect on the part of

friends, as it is probable that many perishable articles were placed with the dead in the graves, while the numerous fragments of pottery, the stone implements, etc., found among the graves, as already noticed, suggest that offerings were placed over the graves as well as within them.

On the southern side of this mound, owing probably to its being always comparatively dry, the pottery was in a better state of preservation, and numerous perfect specimens were obtained from the graves. In two instances, one on the southern, and the other on the western side of the mound, there were double graves. That is, two bodies had been placed in a grave of the usual length but wider than ordinary. In one of these, the skeletons were extended at full length and crossed each other, the skulls being at opposite ends of the grave. In the other the skeletons were side by side, but one of them was without the bones of the feet.

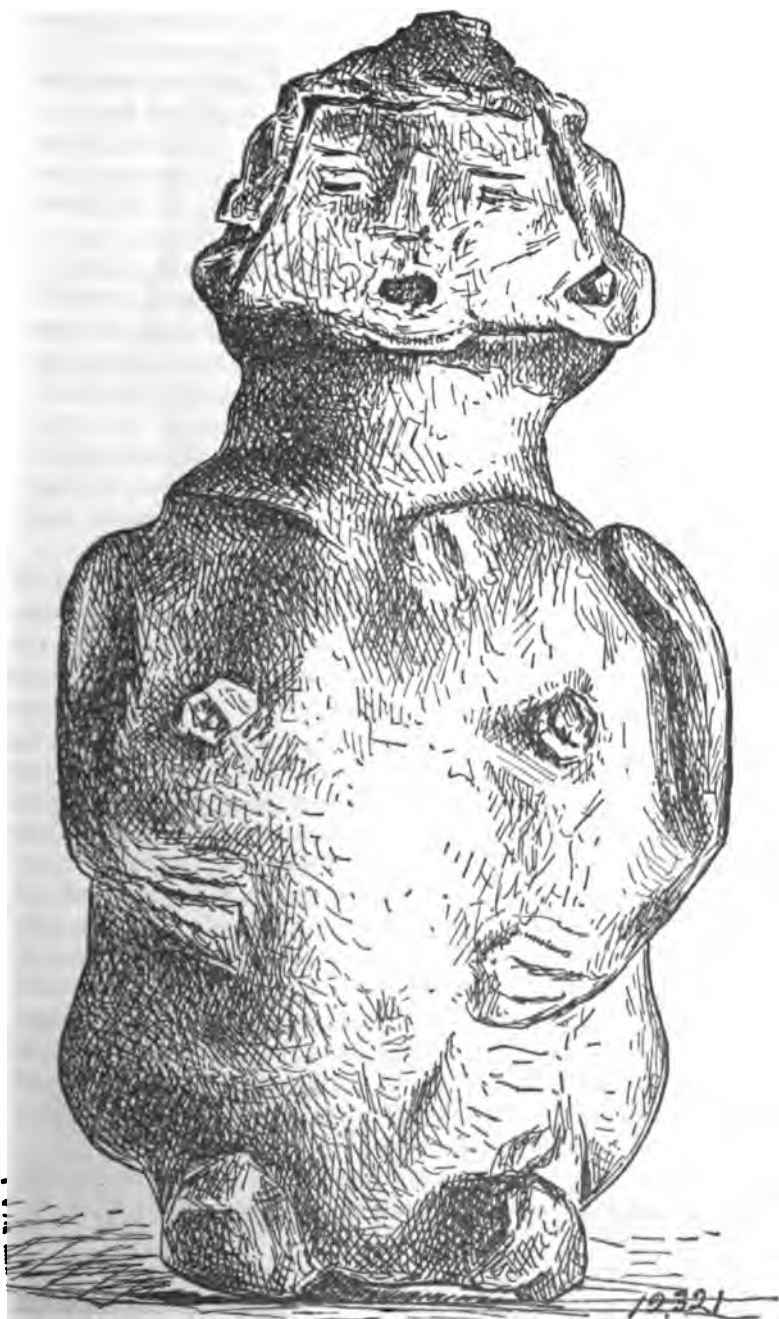
In several instances the skeletons in graves which were about two feet square, were those of adults, and showed by the compact arrangement and confusion of the bones, which were out of all natural connection, that the bones must have been buried after the flesh had decayed. Such instances were probably the burial of bones brought from some other place.

The finding of two distinctly marked forms of crania in this mound is interesting, and of course suggests the very probable reception into the tribe of persons of another nation. The collection of crania from this mound, and other stone graves, seems, to me, to show that while the ordinary form of the crania of this stone grave people was such as would bring them among the short headed nations, they were, by intermixture with a long headed people, often of the orthocephalic type, though individual variation would also cause many heads of a purely brachycephalic nation to pass into the orthocephalic. The presence of several dolichocephalic crania among the others that were collected from the stone graves, furnishes data suggesting the intrusion of that form.

Several bones collected in this mound show the effect of disease of some kind, and are such as would be generally called syphilitic; but several pathologists who have examined them unite in stating that they do not prove the existence of syphilis, as other diseases than syphilis might leave such effects.

The following summary of the collection obtained from this mound, in which about two hundred and fifty persons had been

Fig. 6.



Jar from Stone-grave Mound, M^{rs} Bowling's farm. Natural size.

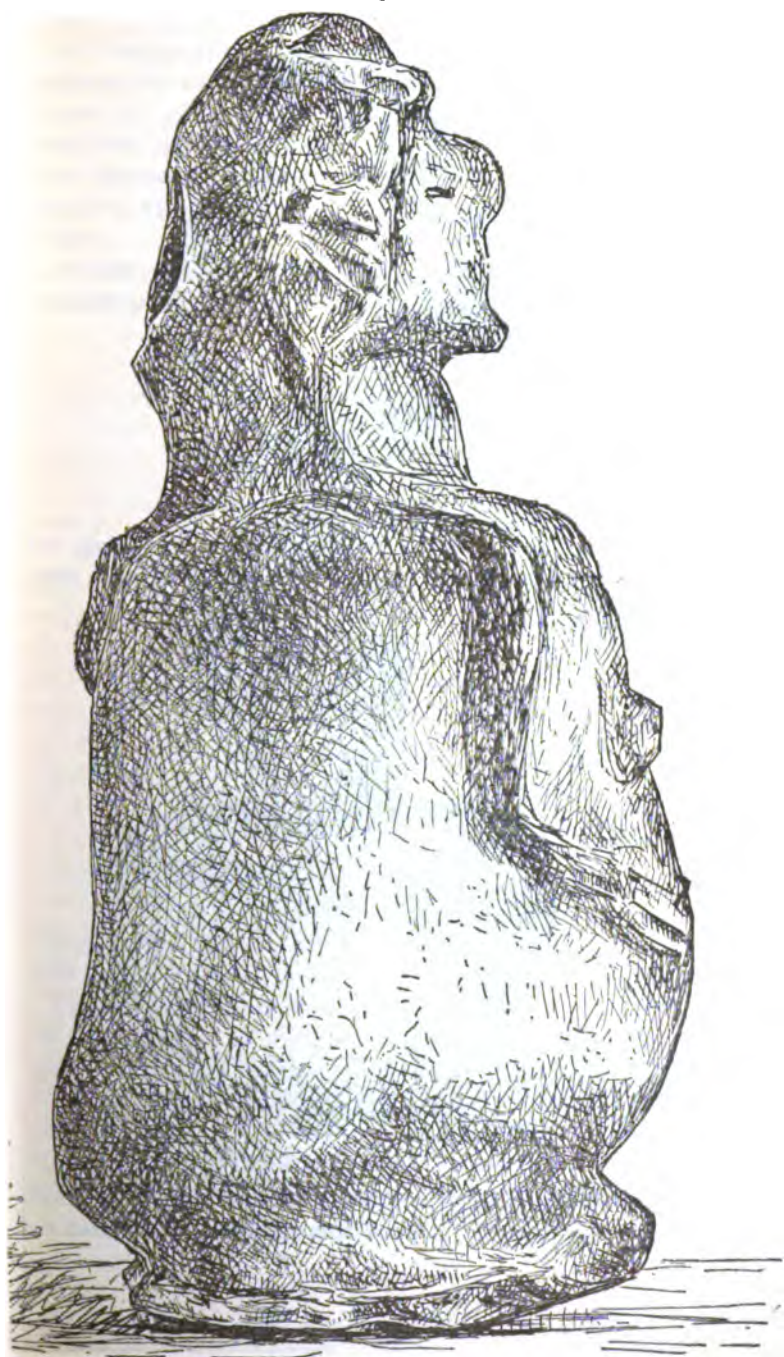
buried, will convey an idea of the contents of the graves, and I may add that the other mounds on Miss Bowling's farm, yielded a corresponding amount of material of the same character :

Portions of fifty-four different skeletons, including many long bones of arms and legs, six sets of pelvic bones, and twenty-five skulls ; twenty-four whole or nearly perfect vessels of pottery, nine lots of fragments of pottery from the graves, fifty-nine pieces of considerable size picked out of the dirt outside of the graves ; nine stone implements from the graves and seventeen outside of them ; eight lots of flint chips from as many different graves ; two awls made of deer's horn, four made of bone ; four teeth of animals, two of which were perforated for suspension ; two shells of turtles ; one wing bone of a bird ; one animal bone ; all from graves ; six spoons made out of shells of fresh water mussels (*Unionidæ*), thirty shells of *Unionidæ* and five lots of *Melania* ; two lots of small shells, *Olivella*, perforated ; four small lots of shell beads, all from graves ; one pipe made of pottery, from a grave ; two rings made of stone, found in one grave, and one made of pottery, found in another.

The pottery is generally well made, though some vessels are much ruder than others. It is usually of a dark gray color, and composed of clay mixed with finely pounded mussel shells. As a rule very little attempt at ornament was made on the vessels from this mound and others adjoining, and only one of the peculiar human shaped vessels, so characteristic of the pottery of this class, was found in the mound. This water vessel, or "idol" as these vessels representing the human form have been designated, is of special interest from its very rudeness of construction and the manner in which the hair, or head-dress is represented. The two views of this vessel (Figs. 6 and 7), representing the front and profile, of natural size, give a far better and more accurate idea than could any description. As will be noticed in figure 7, the opening of the vessel is at the back of the head, and the woman is represented as resting on her knees. This rude attempt in plastic art must not be considered as a fair example of the artistic capabilities of this people, for there are several other vessels modelled after the human form, in the collection from Tennessee now in the Museum, and among them is not one so rude and uncouth as this.

In direct contrast to this grotesque figure are the two beautiful and symmetrical vessels here represented (Figs. 8 and 9), of one-

Fig. 7.



Side view of figure 6.

half their diameter. These jars are made with care and skill;

Fig. 8.



Jar from Stone-grave Mound, Miss Bowling's farm. 4.

their good proportions and well made curves equalling, and closely resembling in outline, some of the best of the early forms

Fig. 9.



Jar from Stone-grave Mound, Miss Bowling's farm. 4.

of the Old World which were produced by the aid of the wheel, while their very simplicity is perfection of the art. Smooth and

well finished, and standing firm and steady, they are in every way superior to the usual vessels of this character which have been taken from the graves and mounds of the southwestern states, as shown by the two following examples of the ordinary type (Figs. 10 and 11). The vessels represented by figures 8, 14 and 15 were taken from graves in mound 2, on Miss Bowling's place; all the other figures, here given, represent those found in graves in the mound of which special mention has been made in the preceding pages.

Another, and very common form of vessel from the stone graves, is represented by figures 12 and 13. These are comparatively

Fig. 10.



Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

well made cooking pots, furnished with holes, through which strings were probably passed, by which the vessels could be suspended.

By far the most common of the vessels found in the graves, are cooking pots, of various sizes, furnished with two handles. Many of these are rudely made and resemble the two toy vessels which are shown, of actual size, in figures 14 and 15. Others are nearly symmetrical and of more graceful shape, as shown by figures 16 and 17. Still better, and exhibiting a higher degree of workmanship, is the one represented in figure 18.

Figure 19 expresses an early style of ornamentation, consisting of a line of punctures, which give relief to the waved outline of the body of the vessel where it joins the neck.

Figure 20 illustrates a form of vessel of which we have numerous examples, showing the peculiar method of ornamentation by pinching up the clay, in a regular manner, so as to form a series of little knobs, in this case arranged around the body of the vessel just below the neck.

Other forms of vessels were, also, found in this mound, some of which were dish and bowl-shaped, like those figured farther on

Fig. 11.



Vessel from Stone-grave Mound, Miss Bowling's farm. $\frac{1}{2}$.

from the Lebanon mound, and the one from Mr. Overton's, represented by figure 2, which is a common shape. Among the fragments from outside the graves, and particularly in the ash bed, were several of a thick and rude character, evidently of large cooking pots.

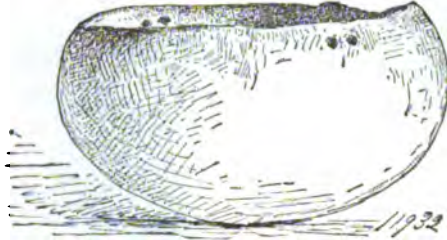
With these articles of pottery should be mentioned the ring made of the same material, which was found in contact with an under jaw, in one of the graves; also the pipe, of which figure 21

is a representation of full size. This was the only pipe found in the mound, and only two or three others, all of this material and shape, were obtained from the other mounds on Miss Bowling's farm.

Among the article of special interest found in the graves, were three rings of nearly uniform size, though made of different materials. One of these (Fig. 22) is made of a hard, green steatite

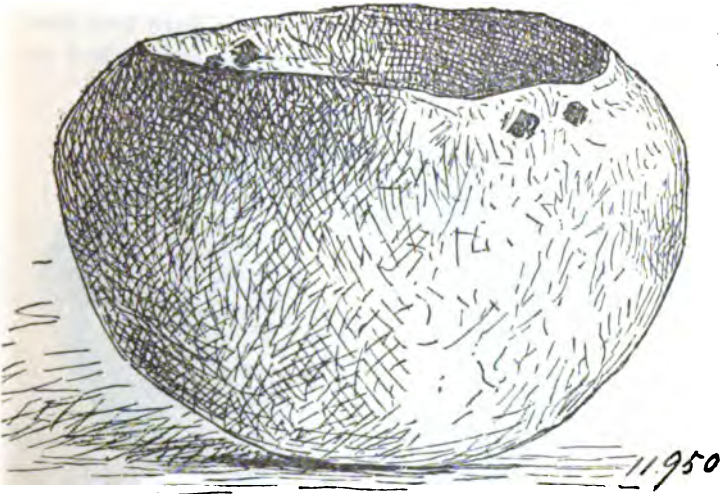
and is represented of actual size. It is perfectly symmetrical and highly polished, one and three-quarters inches in diameter

Fig. 12.



Vessel from Stone-grave Mound, Miss Bowling's farm. 1.

Fig. 13.

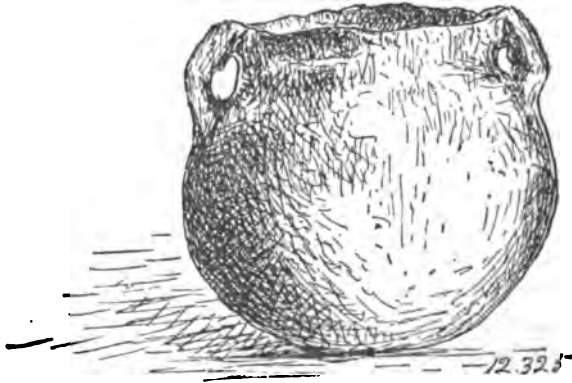


Vessel from Stone-grave Mound, Miss Bowling's farm. 1.

and three-quarters of an inch wide. As shown by the figure, the central portion of the outer surface is cut out so as to leave a ridge around each edge. The inner surface is slightly convex, the

edges being rounded outwards. A similar ring of steatite of about the same size, from Pennsylvania, has been figured by Mr. Rau,

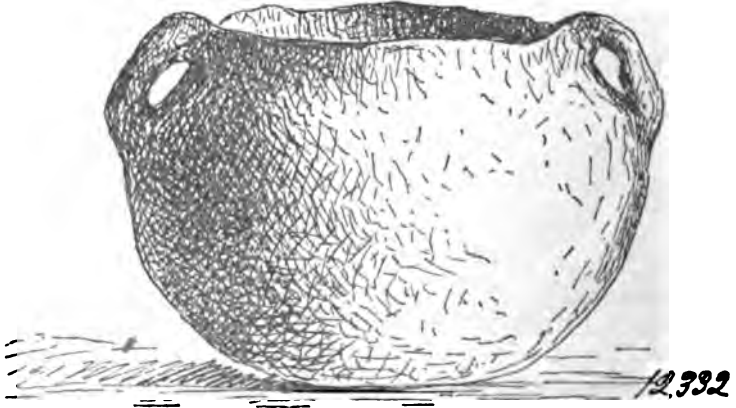
Fig. 14.



Vessel from Stone-grave Mound, Miss Bowling's farm. Natural size.

and a few others, made of various materials, have been found in mounds and on the surface. The specimen here figured was in

Fig. 15.



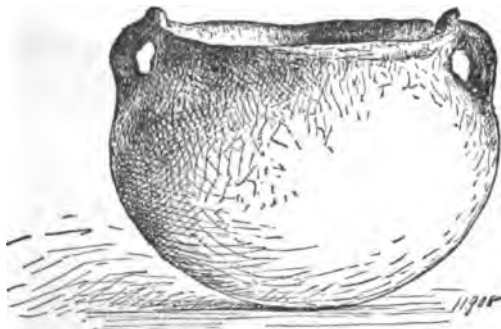
Vessel from Stone-grave Mound, Miss Bowling's farm. Natural size.

close contact with the under jaw of the elderly person buried in the grave, and in the same grave, near its centre, was another ring

made of slate. This second specimen is one-eighth of an inch less in diameter and in width, than the one made of steatite, and differed from that simply in not having the projecting rims, it being perfectly flat and smooth on its outer surface.

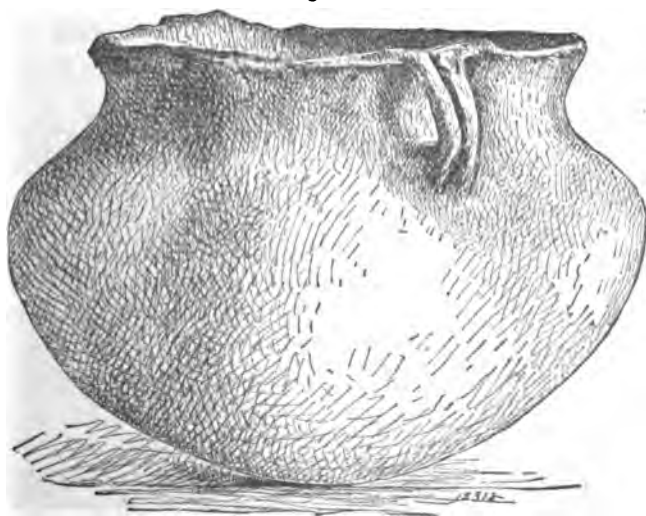
The third example of these rings is made of well burnt pottery, and while it is of the same external diameter as the one made of steatite, the thickness is slightly less. The width is the same as the one figured, and its outer surface is flat like the specimen made of slate.

Fig. 16.



Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

Fig. 17.

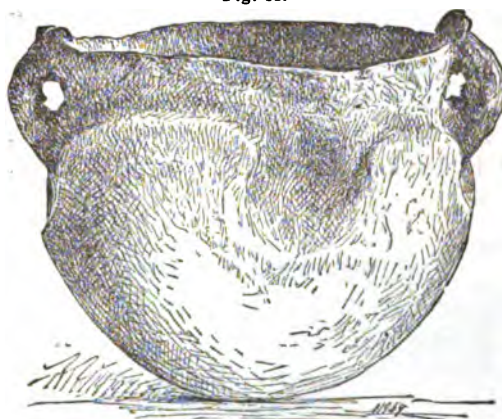


Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

This pottery ring, like the one made of steatite, was found in a grave and close to an under jaw.

From the fact that two of the three rings were found in the position stated, it may be surmised that they were labrets, and were in the lips of the individuals when buried. Their size is not as large as some labrets that have been described as used by Indians of the northwestern coast, therefore there is no objection to the theory on account of the size of the rings, although, as they were found in only two of the many graves, their scarcity indicates they were not in common use. Of course, these rings may have been for an entirely different purpose than I have suggested, and the contact of two of them with the under jaws may be accidental.

Fig. 18.



Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

Implements made of stone, though often found on the surface in the vicinity of the old cemeteries of the Cumberland Valley, were not very abundant in these mounds, and were seldom found in the graves.

Out of thirty-one chipped implements obtained from the mounds on Miss Bowling's farm, explored for the Mu-

seum, only five were found in the graves. The position of the others among the graves, however, shows that, like many of the articles of pottery, these stone implements had been left upon, or by the sides of the graves and hence are contemporaneous with them.

The chipped implements are of the several varieties of hornstone and jasper, of which the majority of such articles found in the southern and western states are made. They are of various sizes, patterns and perfection of finish, such as are usually found together. One of the largest of these, which can be regarded as a knife, scraper, dagger, or spearpoint, as fancy may incline, is represented of natural size (Fig. 23). This was found in grave 15, with several other articles, as already mentioned. Two other

large implements (12339) would be classed as scrapers. They are five inches long and from two, to two and a half wide.

Fig. 19.



Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

One of them is made from a piece of black hornstone which has an impure nodule on one side, that must have proved far less tractable to the worker than the rest of the stone, and may indicate that the scraper was used without a handle of wood, for the nodular part fits well to the palm of the hand and allows the opposite side to be freely used when so held.

Fig. 20.



Vessel from Stone-grave Mound, Miss Bowling's farm. 4.

The other scraper is made of a gray hornstone, and its highly polished edges and surfaces show that it had long been used, probably, simply as a hand-stone.

A still ruder form of scraper (11959), of the same material as the last, was found between the graves. This specimen is three and three-quarters inches in length, by two and a quarter in width, and nearly an inch in its greatest thickness. It is as rudely made as many of the implements from the gravel bed at Trenton, described by Dr. Abbott, although of a material which is easily worked into delicate forms.

Another specimen (12338), of a light mottled gray hornstone, is a well made scraper with a bevelled edge, and its size is such as to suggest that it had been attached to a handle. It is two and three-quarters inches long, by one and a half across the

Fig. 21.



Pipe of Pottery, Stone-grave Mound, Miss Bowling's farm. Natural size.

bevelled portion, the scraping edge of which is slightly convex. The opposite end of the implement is somewhat pointed and thinner at the edges.

From the scraper last described, the transition is easy to a small leaf-shaped implement of similar material, carefully chipped to a point and thin edges. This implement (12340) is an inch and three-quarters long, not exceeding in its greatest width three-

quarters of an inch, flat on one surface and having a ridge along the opposite centre. While it might be classed as a leaf-shaped arrowpoint, it is more likely to have been mounted on a short handle for use as a knife, for which it is well adapted by its shape, point and edges.

An implement of a gray hornstone, three and three-fourths inches long, one inch in width and one-half an inch in thickness in the centre, is interesting from

Fig. 22.

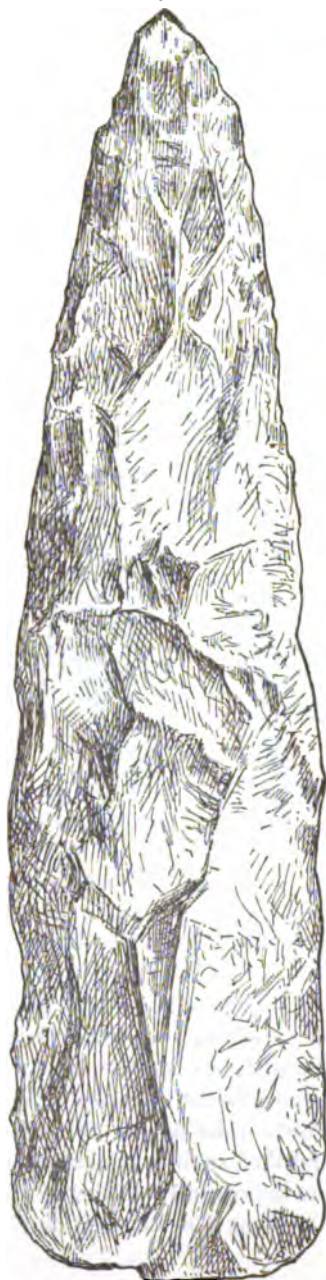


Ring of Steatite, Stone-grave Mound,
Miss Bowling's farm. Nat. size. 11877.

its rather unusual shape, being pointed at both ends and decreasing in thickness in all directions from the centre to the cutting edges. This was found in the dirt between the graves, and is No. 12339 in the Museum catalogue. It is, in shape, like the implement figured by Prof. Jones (p. 138, fig. 75), but only about one-quarter of the size.

Passing to the spearpoints, knives and arrowpoints, there are several of interest, a few of which were taken from the graves.

Fig. 23.



11892

Chipped Implement, Stone-grave
Mound, Miss Bowling's farm. Nat. size.

The largest of these is a well-made, symmetrical spearpoint (11958), four inches long, one and three-fourths in greatest width, and one-fourth of an inch thick at its expanded base, which is perfectly straight and flat. The stem is slightly notched.

Another specimen (12337), as long as the one just described, is somewhat thicker, but only one and one-fourth inches wide. This has a narrow stem without side notches.

Ranging between these spearpoints and the small arrowheads, are ten perfect and several broken implements that may be classed

either as spearpoints, knives, or arrow-points. The largest of these (11957), and the only one having an approach to barbs, is shown in figure 24, of actual size. As will be seen by the figure this is not a symmetrical implement, and its shape is such as to suggest its use as a knife, or daggerpoint.

Two specimens (12336-7) are about half the size of the last; one of these has a perfect and delicate point, and is slightly notched on the sides of the stem. Seven others are of various sizes and widths, between two and one-half and three inches in length, and all have short, straight, or slightly notched stems. One of these (12336, *a*) is much thinner and broader, in proportion to its length, than any of the others, and mounted on a handle would form a cutting instrument of no mean character.



Chipped Implement from Stone-grave Mound, Miss Bowling's farm. Natural size.

Of three specimens from an inch and a quarter to an inch and a half in length, that were probably arrowpoints, one (12341) has a fine point, an expanded and slightly convex base, and a notched stem. Another (12341, *a*) has a straight stem and a proportionally longer and more slender point. The third (11890) is short and broad, with a convex base and that peculiarly shaped and abruptly made point which gives the impression that it was a broken specimen repointed.

Among the chipped implements of flint, was one that would

probably be classed with the drills, or perforators. This was found in a grave and is represented, of natural size, in figure 25.

Stone axes and celts have not often been found in the stone graves, though common among surface collections; and but two specimens were found in the three burial mounds explored under my direction, on Miss Bowling's farm. These are made of the same hard greenstone as the specimens obtained at Mr. Overton's place, previously described, and resemble them in size, shape and finish. The smallest is one inch thick, two inches wide and three and one-half long. The other is of the same thickness but is one-half of an inch wider and longer. The lower half of these small axes has been ground and polished on both sides, forming a central cutting edge like the modern steel axe. The opposite end is left rough, and was probably inserted into a socket of wood or horn, like those from the Swiss Lakes, some of which correspond very closely to the specimens from Tennessee, in material, shape and finish. Both of these specimens were found in one grave in the third mound.

In connection with these polished implements of stone, it is of interest to note a fragment of fine grained sandstone (12344), seven inches long, four wide and two thick, which I found between the graves, in the burial mound here particularly referred to. This fragment is evidently a portion of a sharpening and polishing stone that had been long in use. Its opposite surfaces were concave and were worn so deep by long use that they had nearly come together and to this fact the breakage of the stone at this particular point was due. On the sides and in the large concavity of one surface, are small grooves and several deeply cut lines, formed by rubbing implements of different kinds on the stone. As will be inferred, this is a very interesting specimen, illustrating the method of polishing stone implements, and with the three rings, probably as important as any obtained from this mound.

Fig. 25.



11.870

Chipped Implement from Stone-grave Mound, Miss Bowling's farm. Nat. size.

A water-worn stone (12345), six inches long, of oval form, was found in the second mound, and is of interest as furnishing conclusive evidence of the use of natural forms for the various purposes to which they may have been adapted. The stone in question is highly polished on one portion of its surface, and by holding it in the hand in the easiest manner, its adaptation for various rubbing purposes, which would cause the polishing of the particular portion showing use, is readily perceived.

Among the articles found between the graves in the mound was the half of one of the thin, flat stones with two holes, which are generally classed as personal ornaments.

In mound 2, three discoidal, or "chungke" stones were found. One of these is made of white quartz, highly polished, and is three inches in diameter. Another, about half an inch greater in diameter, is made of a compact gray sandstone, and shows signs of rough usage on its fractured edge. The third is three inches in diameter, one and one half thick, and is biconcave. The material is rather coarse, hard sandstone.

Near the ash bed, which I have already mentioned as having been found under the lower tier of graves, north of the centre of the mound, was found a fragment of talcose slate (11961), that probably once formed a portion of a cooking utensil of some kind, perhaps a large vessel, or possibly a baking stone like those found in the shellheaps of California. It is a well-worked piece of stone of nearly an equal thickness of about an inch, and slightly smoother on one surface, which is a little convex, than on the other. Near one edge there is a hole three-eighths of an inch in diameter. A careful search was made for other portions of this utensil, but only this was found and its weathered edges show it to have been a fragment when left near the ancient fireplace.

A small mass of burnt clay (12346) containing the impression of several reeds which had been placed parallel to each other, was also found in the bed of ashes.

Implements made of bones of animals have been found among the remains of prehistoric races in various parts of the world, and the graves, mounds and shellheaps of America have furnished many examples of the typical forms. Pointed implements made from the leg bones of animals, particularly of the metatarsal bones of various species of deer, are the most common forms, and specimens from the mounds and stone graves of Tennessee

are identical in shape and finish with those from the Swiss Lake dwellings.

One of these large implements (11904), here shown (Fig. 26), of one-half its diameter, was found in one of the graves in the first mound explored on Miss Bowling's farm.

Fig. 26.



Implement
of Bone. Stone-
grave Mound,
Miss Bowling's
farm. $\frac{1}{2}$.

Other implements for like use were made from the antlers of deer, and two such (11895) were found in grave 15, which, as already mentioned, contained numerous articles. Another similar and pointed tool (11901), made from the leg bone of a large bird, was found in another of the graves in the same mound.

Splinters of bone were also utilized as awls and needles. Two such (11024), six and seven inches in length, and looking like knitting needles, were found in grave 25. These were probably made from pieces cut from the metatarsus of a deer and then polished and pointed. The smaller of these has a slight groove cut around the large end, as if for fastening a thread. The other, which is shown in figure 27, of one-half its length, is smooth and highly polished over its whole surface.

Fig. 27.



Implement
of Bone, Stone-
grave Mound,
Miss Bowling's
farm. $\frac{1}{2}$.

Among the articles found in grave 15 were six small splinters of bone, which have been carefully pointed at one end, and, in those that are perfect, the opposite end is notched as shown in figure 28, representing a perfect specimen of its actual size.

These small bones were found close to the skull, and I believe them to have formed part of a hair comb, from this fact and from their close resemblance to the teeth of combs found in the graves in Peru, and their still greater resemblance to the wooden teeth in the hair comb once belonging to the famous Modoc, Capt. Jack,

and now in the Museum. This view was further substantiated by the discovery, afterwards, in a grave at Lebanon, of several similar pieces of bone, also by the side of a skull.

Several other bones were found in the graves of mound 1, but with the exception of two wing bones of a large bird (11897), which may have been whistles, there was nothing to indicate that they were intended for special purposes.

Several teeth were also found, among them one of a large rodent, and two canines, probably of a young bear (11917), which were

Fig. 28.



11898

Pointed Bone,
Stone-grave
Mound,
Miss Bowling's
farm.
Natural size.

perforated, and as they were found with a number of beads made of shell, near the neck of the skeleton, it is very likely that they formed part of a necklace. One of these teeth is figured (Fig. 29). Several shells of turtles (*Cistudo*) were found in the graves, and though they do not show any signs of particular use, they may have been rattles, similar to those known to have been used by some of the Southern tribes and still common among the Indians.

Fig. 29.



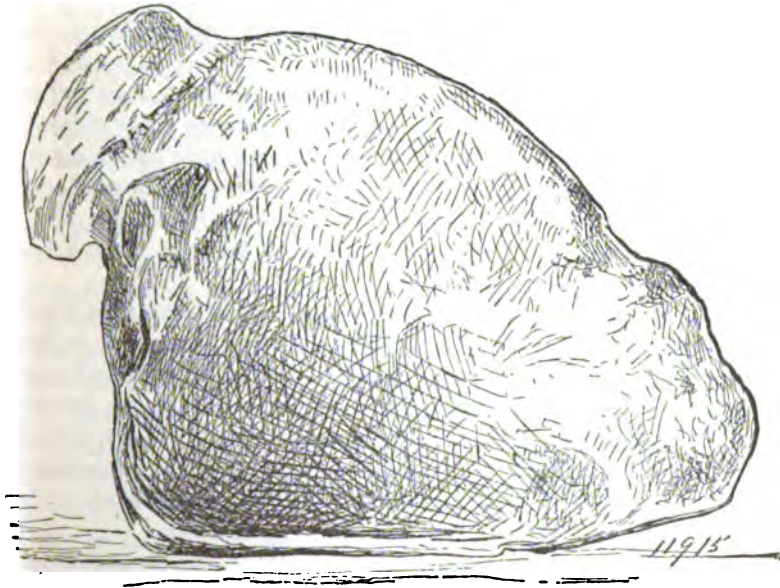
Tooth of a Bear,
Stone-grave
Mound, Miss
Bowling's farm.
Natural size.

Of articles made of shells several forms occurred in the graves in this mound, the most common being the spoons made of the valves of *Unio*. These spoons, as will be seen by the illustration (Fig. 30), were very convenient and useful domestic articles. Many of them were found in the graves and generally in such vessels as food would naturally be placed in, but owing to the decay of the thin shell, few could be handled without crumbling into chalky particles. Six were, however, saved from the graves in mound 1, and several others were collected afterwards in different localities. All of those from the graves in the mound were made from the right valves of the mussels, and indicate righthandedness, as the rule, with this people.⁵ They were made by cutting away the thick portion of the

⁵I have since examined over thirty of these shell spoons now in the Museum, and all are made from the right valves of *Unionida*, and so shaped as to be most conveniently used with the right hand.

shell along the hinge, and also the thin portion of the lip. The shell was then further cut away on its upper part, leaving the projecting handle as shown in the figure, which, from the position in which the spoon was placed by the artist, does not convey as good an idea of the thing itself as would be the case if the drawing had been reversed, and the handle part of the spoon placed in the right lower corner. This would bring the valve of the shell in its natural position and also show the spoon in its most convenient position for use in the right hand. In

Fig. 30.

Spoon made from Shell of *Unio*, Stone-grave Mound. Natural size.

some specimens the handle is not rounded and smoothly cut, as in the one figured, but is deeply notched on its outer edge as if for ornament.

Many natural valves of several species of *Unionidae* were found in the graves, sometimes in the same grave with one or more spoons. Several other shells in natural condition were, also, found in the graves. The most numerous of these were two species of *Melania*, and one or two other species of fluviatile shells

common in the State, and, of course, they must have been purposely deposited within the graves, while several specimens of *Helix* were undoubtedly living intruders.

In one grave, near the head, were several hundred specimens (11934) of the little *Olivella*, identified by Prof. Hamlin of the Zoölogical Museum as *O. mutica* Say, of the Southern Atlantic coast. Every one of these little shells, which are not much over a quarter of an inch in length, has the apex ground off, thus making a hole through the shell by which it could be strung, the whole lot in question probably having once formed a necklace, or head ornament of great value to its owner. The occurrence of this and other marine shells is another indication of intertribal intercourse, or of extensive wanderings on the part of this ancient people.

In three other graves in this mound, beads made from marine shells were found. These beads were the same as those obtained from the mounds throughout the country, and have been cut principally from large marine shells, such as *Strombus*, *Busycon*, etc. Similar beads are figured in the last Report, p. 85, fig. 1. Many of the beads in this mound were very much decayed. Those that were collected are of three forms.

In the grave in which the perforated bear's teeth were found was one large, oval, and symmetrical bead, three-quarters of an inch long by one-half an inch in diameter. About one hundred other smaller, well finished beads, with a diameter of about a quarter of an inch and a length of about two-thirds the diameter, formed the rest of what I believe was a necklace, which we could probably reconstruct by placing the large bead and the two bear's teeth in the centre with the small rounded beads on each side.

In another grave in which were several common fresh-water shells, were also a number of beads very much decayed, but about twenty were saved. These are of two kinds, a small rounded form about a third of an inch long, and a flat bead having a thickness of not over an eighth of an inch, and a diameter of about one-half an inch. In another grave was found a single bead like the last described.

In closing this account of the contents of the mound, I must reiterate that not a single article was found indicating contact with any other people than different tribes belonging to their own race, and the same applies to all the other mounds of this important group on Miss Bowling's farm.

Having a desire to make an examination of one of the large mounds, of which there are many still remaining in the Cumberland valley, I accepted the invitation of the Rev. M. A. Matthews to explore one on land belonging to the family of Mrs. Matthews and known, from the name of the family, as the Love Mound.

This large mound is 23 feet high, and, as near as the measurements could be made, owing to the washing of the banks, 155 feet in diameter in a north-south line, and 147 feet in an east-west direction. It is located near the East Fork of White Creek, which flows in a southwestern direction to the Cumberland, entering that river about six miles distant in an air line.

In the immediate vicinity of the mound, on the north, west and south, are large artificial depressions, showing where the earth forming the mound was obtained. The excavations on the north and south have left a slight ridge, about a hundred feet in width and several hundred feet in length, to the eastward of the mound. About two hundred feet to the north of the end of this ridge is a small mound nearly obliterated by cultivation, and about three times the distance to the southeast is an outcrop of limestone. Along this ridge, and towards the limestone ledge, are traces of many stone graves of the same character as those already described. These graves had nearly all been destroyed by continued cultivation of the land, and I found but one that had not been disturbed. This grave was 6 feet long, 22 inches wide and 18 inches deep. The body had been placed in the grave with the head to the west. The skeleton was so far decayed that only a few of the bones could be saved, and the only article found in the grave was a portion of an ear ornament in contact with the side of the skull. This ear-drop was made of a piece of wood covered with a thin layer of copper.

An excavation was made in the centre of the small mound, but nothing was discovered except the indications of a fire a few feet from what is now the surface of the mound.

The large mound was a land mark at the settlement of the place, in 1795, by Joseph Love, the grandfather of Mrs. Matthews, and its summit has been used as a family cemetery, which somewhat interfered with the work of exploration.

In 1795 Mr. Love, as reliable family tradition states, "found a heavy growth of timber on the mound, and decayed stumps of red oak trees that were over two feet in diameter." Twenty-five years

ago the mound was cleared of timber with the view of cultivating the sides, but as they were found to be too steep, it was again left to nature. The trees which cover the mound at present are, therefore, less than twenty-five years of age.

Four days, with six to eight men each day, were given to the exploration of this mound, in the following manner. A trench, 4 feet wide and 44 feet in length, was cut on the southern side of the mound in its central portion, and running east and west. This trench was dug to the depth of 10 feet. Two other trenches, 15 feet apart, of the same width as the first, were then started from the first trench. The westernmost of these was carried 11 feet directly north, so as to reach as near the centre of the mound as possible, without disturbing the several graves on the summit. The other trench was carried 16 feet in a northwesterly direction, the two trenches terminating between 10 and 11 feet apart. These two trenches were dug to a depth of 23 feet, when the original black soil was reached, upon which the mound was erected. At the bottom and ends of these trenches, tunnels were started so as to reach the centre of the mound. Eight feet in length was thus added to the trenches, and from these tunnels auger borings, three feet in length, were made in all directions without meeting with the slightest indication of a central chamber or relic of any kind. As it seemed useless to continue the exploration, the trenches were filled and the mound restored to its former shape.

The earth of which this mound was composed had been brought in small quantities, probably in baskets, and the outline of each little load could be distinctly seen on the sides of the trenches. This earth had, through the long period of time that must have elapsed since the mound was erected, become dry and compact and nearly as hard as sandstone. It was, therefore, necessary to loosen it by the pick and much was thrown from the trenches in lumps by the workmen. The fineness of the material, and its freedom from stones and pebbles, were noticed by all at work, and it appeared as if the earth had been carefully sifted before it was placed on the mound. In the nearly five hundred cubic yards of earth removed from the trenches, only the following extraneous things were found. In the long trench, at the depth of 3 and 5 feet, two small fragments of cannel coal, and at the depth of 5 and 6 feet, two small pieces of greatly decomposed limestone. In the two trenches diverging from the one first made, and at depths of 3,





EARTHWORK

— on the —

★ **LANDSLEY ESTATE** ★

— sec —

GREENWOOD SEMINARY, LEBANON, TENNESSEE.

— From a Survey by A.H. Buchanan. —

5 and 8 feet, four small pieces of limestone and a fragment of flint were found. At 14 feet a piece of the shell of a *Unio* was discovered, while three or four flint chips and as many minute pieces of sand and limestone were thrown out at various depths. In the trenches near the centre, at a depth of 13 feet, were found three slabs of decomposed limestone each of about 12×18 inches, and 1 inch in thickness. The position in which these stones were found was such as to indicate that they were part of a circle of stones around the centre of the mound when it had reached the height of 10 feet. The decayed condition of these slabs of limestone and the formation, on the under side of each, of a thick scale of red oxide of iron, are indications of the great age of the mound itself.

The results of the exploration of this mound lead to the supposition that it was erected for some other purpose than as a monument over the remains of the dead, and, as the remains of numerous graves near it indicate a settlement at this place, it is very likely that it was devoted to some other important purpose of the people of the town.

The most important of my explorations were those within the Earthwork near Lebanon, in Wilson Co., and about sixty miles east from Nashville. At this place on the farm of Dr. Samuel Crockett, included in the estate of the Lindsley family, who were early settlers in the county, are the remains of an extensive settlement of the Moundbuilders of Tennessee. Accepting the kind invitation of Mrs. N. Lawrence Lindsley, Principal of the Greenwood Seminary, I was enabled by her coöperation and the assistance of Mrs. Henry Lindsley, Dr. Crockett, and twenty-five workmen, to make, in a week's time, a comparatively thorough exploration of these remains, for an accurate survey of which, reproduced on the accompanying map, I am indebted to Prof. J. H. Buchanan of Lebanon.

As will be seen by an examination of the map, Spring Creek, a tributary of the Cumberland, makes at this place a bend to the eastward, where there is a limestone bluff. In this bend, near its narrowest part, is located an earthwork enclosing an area of between ten and eleven acres, and having its greatest length, of about 900 feet, in a north-south direction, and a width from east to west of about 650 feet. At nearly regular distances along this embankment, on the inside, are slight elevations at the angles of the earthwork. These are now 18 inches higher than the embank-

ment between the angles, and slope uniformly to the bottom of the ditch, which was originally, probably, between 3 and 4 feet in depth. Between the angles, the top of the inner wall is now not much over a foot above the general level, and the slope to the bottom of the ditch is divided into two parts by a level bench nearly 3 feet in width. The outside slope of the ditch, throughout, is uniform from top to bottom, and along its outer edge is a crest about 6 inches high. The sections at the bottom of the map illustrate this structure; *a*, the outer, and *b*, the inner side of the ditch. At the eastern and southern portions of the enclosure are three causeways or openings through the embankment. Near the northwestern end, between the embankment and the creek, is a low mound, the existence of which I was not aware of until the survey was made by Prof. Buchanan, after the rank vegetation, which covered everything at the time of my visit, had been destroyed by the frosts. At this portion of the enclosure and to the southeast, the land is very low and in the time of spring floods must be washed by the overflow from the creek. To the westward the land rises, and at the southwestern corner of the enclosure there is a rocky portion 20 to 25 feet higher than along the eastern embankment. Still further to the southwest, near the creek, the land is 30 feet higher than at the point near the creek on the northern side. On this southern bluff are six mounds, only a few feet in height, situated as shown on the map. Two of these mounds I caused to be trenched, and found that they were constructed of earth and stones which had subsequently been heated and burned by long continued fires, and there was no indication of their having been used for any other purpose. In the ditch, on the western side, is a large elm tree 4 feet 2 inches in diameter. On the summit of the large mound within the enclosure were several large trees, among them a poplar $2\frac{1}{2}$ feet in diameter and a Hackberry 2 feet in diameter.

Many other trees of considerable size were growing within the enclosure and several large trees had fallen and gone to decay. While this tree growth does not, in all probability, give any approximation to the period when this ancient town was deserted, it at least points to a time before the intrusion of our own race, and everything found within the enclosure was confirmatory of the antiquity of the place. To the east of the embankment there is a depression following the curve of the wall on that side, indicated

on the map by parallel dotted lines, which looks like a former channel of the creek; and it is very likely that when the earth-work was made, the creek flowed near the eastern wall, and has since cut its way four or five hundred feet farther to the eastward. The geological structure, contour of the land and direction of the natural flow of the creek, are all favorable to such a change in the course of centuries.

The first object of attention within the enclosure is the large mound marked *A* on the map, and also shown in section at the bottom. This mound, as shown by the section (the shaded part in which represents the portion excavated), has steep sides and a flat top. Its dimensions are 138 feet by 120 at its base, and 95 by 75 feet on its summit, with a height of 15 feet. A trench was cut from the base of the eastern side and carried to the centre; beginning with a width of 4 feet and gradually widening to 14. After the centre was reached that portion was deepened to 18 feet from the summit, thus digging down 3 feet in the original soil, consisting of yellow gravel and clay, which was found to have been previously undisturbed. The earth of which the mound was composed was very hard, dry and compact, and necessitated the use of the pick. The construction was the same as that of the Love Mound. At a depth of between 3 and 4 feet from the surface, near the centre, were found three slabs of stone, each about 12×16 inches, a stone chip, piece of mica, fragment of pottery, and a discoidal piece of sandstone (Fig. 31), with several grooves upon its surface, indicating that it had been used as a sharpening stone. At a depth of between 7 and 8 feet was an ash bed that had evidently extended over the surface of the mound when at the height of 7 feet. In this bed of ashes were fragments of burnt bones, stones, and pottery; a discoidal stone, an arrowhead, flint chip, portion of a shell of a *Unio*, several burnt corn cobs, a piece of charred matting, charcoal, etc. Under the ashes the earth was burnt to a depth of a few inches, showing that the ashes were the remains of a fire on the spot and not material brought to the mound. At the depth of 13 feet, a piece of cedar, a few inches in diameter and much decayed, was found standing upright, with its base below the surface of the earth upon which the mound had been erected. Between 14 and 15 feet, and thus on, or close to the original soil, was another extensive bed of ashes, in which a few burnt bones of deer and pieces of charcoal were found.

The examination, therefore, showed that this was not a burial mound and the two fires that had been made, with the relics found in the ashes, lead to the supposition that it was erected in connection with some peculiar rites celebrated at two periods during its construction. The place may have been the site of an important building. It is very likely that one stood upon the summit of the mound and that all traces of it have been washed away after the decay of the structure, as would be expected upon such an exposed position.

To the southeast of the large mound, was one, marked *C* on the map, which was nearly 3 feet in height and 47 in extreme diameter, having a slight central depression 26 feet in diameter. On removing the earth, this mound was found to contain sixty stone graves,

Fig. 31.



Sharpening Stone from Large Mound within Earthwork. Natural size.

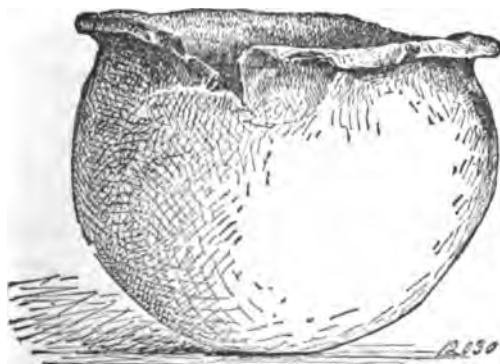
arranged in the form of a hollow square about the outer portion of the mound, in two or three irregular rows and in three tiers. The graves were carefully made with large flat stones, in the same manner as those I have already described, and were all of large size. The examination showed that, with the exception of one child buried in the same grave with an adult, all the bodies were adults and had been placed at full length in the graves. The grave con-

taining the bones of the child with those of an adult person, was in the lowest tier and among the first made. In this grave was found a large dish made of pottery like the one represented in figure 34, and in this dish was the bowl (Fig. 32), reproduced of one-half its diameter. A small discoidal stone (Fig. 33) was also found in this grave and is shown of natural size. Near this grave, on the inner side, were found the remains of a body that had not been enclosed in stone, and this was the only instance of the kind in the mound. The skull belonging to this skeleton was

saved (12003). In the lowest tier of graves was one that contained the remains of two skeletons, the skulls of which were saved (12014, 15). The only article found in this grave was a dish similar to No. 12009, which is figured.

In another of the graves of this lowest tier, in which the skeleton was much decayed, the following articles were found. A jar (12008) at the feet of the skeleton; near it the dish (12009) of which figure 34 is a representation, reduced to one-half its diameter. With the bones of the hand was a pipe (12011) made of sandstone, which is shown of full size by figure 35. In the dish was a large bone of a deer's leg (12010), which had been cut and

Fig. 32.



Bowl from grave, Burial Mound within Earthwork. 4.

broken, and near the dish was a small mass of graphite (12012), a pebble and a flint chip (12013).

In another of the graves of this lowest tier, were found the following articles. An ornament of very thin copper (12021) which was originally circular and with a corrugated surface. Only fragments of this could be preserved, and its full size could not be determined, though it was probably 4 or 5 inches in diameter. An earthen pot (12025), a dish (12024), and the skull (12022) were also secured. The remainder of these oldest graves in the mound yielded only fragments of pottery. As the earth of the mound was very damp, the pottery was soft and the bones were much decayed, so that great difficulty was experienced in taking the

articles out, and it was necessary to have the pottery carefully dried before it could be handled.

Several of the skeletons showed the effects of inflammatory diseases, and a number of specimens of pathological interest were obtained.

In the middle and upper tiers several graves were found containing relics. In one were portions of an ornament, circular in shape and about 5 inches in diameter, made of two sheets of copper closely united (12023), similar to that found in one of the oldest graves, and like that, also resting on the breast bone, which, with the ribs, had been discolored and preserved by its contact. In this grave were also three delicate and well-made arrowheads (12020) and an earthen pot (12019, Fig. 36).



Fig. 33.

Discoidal Stone from grave. Burial Mound within Earthwork. Nat. size.

In another grave were found three articles of pottery, viz.: a vessel with handles (12034), a large dish (12035), and the water jar (12033) of a pattern similar to others found, and represented by figure 37.

A similar jar of slightly different shape (Fig. 38), having the surface divided into portions as if designed after a gourd, was found at the feet of a skeleton.

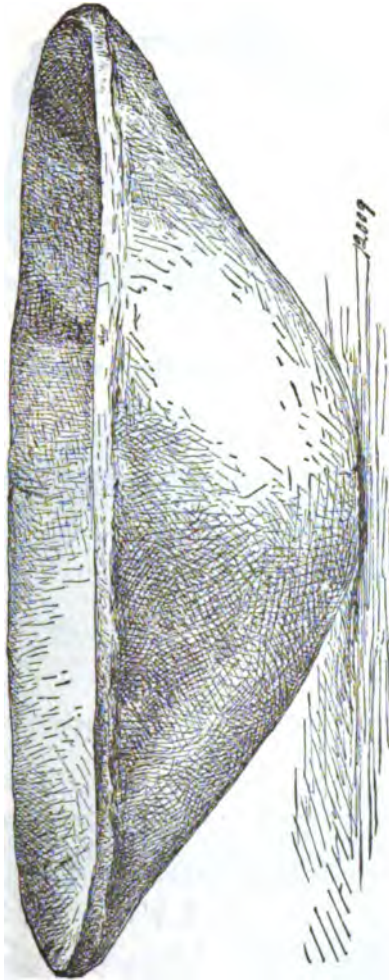
Figure 39 represents a potsherd (12005) taken from one of the graves. This is probably a portion of a small bowl, and is an attempt, it seems to me, at a reproduction of the head of a bat, the features of which are more apparent in the fragment than in the figure.

Pieces of mica (12038) were also found in one of the graves, and in another was a pipe (12010) carved from a dark slate (Fig. 40), which is of interest from its resemblance in form to pipes of recent manufacture.

In the earth between the graves, numerous fragments of pottery and a few perfect vessels were found. In one of the pots were two of the shell spoons of which mention has been made on a preceding page. A discoidal stone was also obtained. Between two of

the graves, nearest the surface, was found the interesting pipe (11993), carved from green steatite, and representing a man holding a cooking vessel which forms the bowl of the pipe, the hole

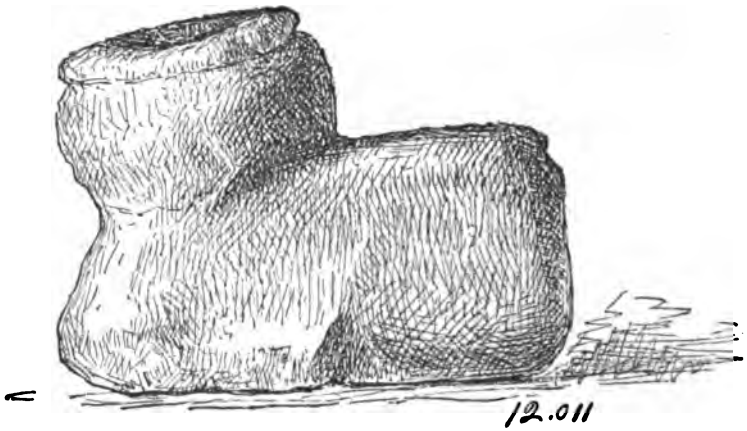
Fig. 34.



Dish from grave, Burial Mound within Earthwork. 4.

for the insertion of the stem being in his back. The three views given in figures 41, 42 and 43, will convey a better idea, than words, of this interesting relic. The lower portion of the figure is

Fig. 35.



Pipe made of Sandstone, from grave, Burial Mound within Earthwork. Nat. size.

Fig. 36.

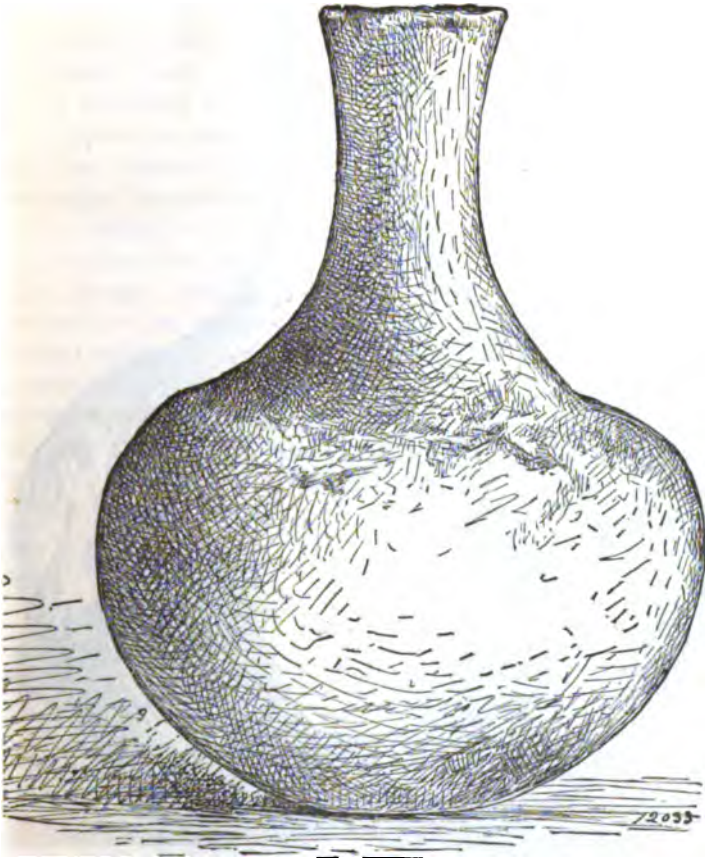


Pot from grave, Burial Mound within Earthwork. 1.

left unfinished as if that part had been inserted in a base of some other material, which is also indicated by the hole in the stump of the right leg.

Scattered irregularly within the enclosure are nearly one hun-

Fig. 37.



Jar from grave, Burial Mound within Earthwork. 4.

dred more or less defined circular ridges of earth, which are from a few inches to a little over 3 feet in height, and of diameters varying from 10 to 50 feet. The best defined of these little mounds was that marked *B* on the map. An examination of these

numerous low mounds, or rather earth rings as there could generally be traced a central depression, soon convinced me that I had before me the remains of the dwellings of the people who had

Fig. 38.

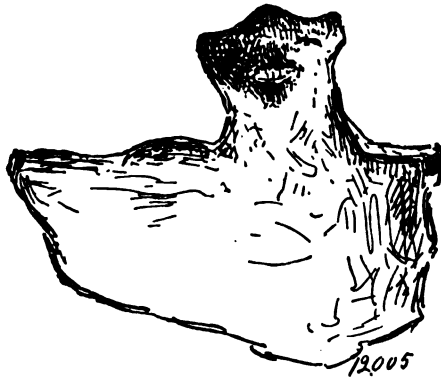


Jar from grave, Burial Mound within Earthwork. 4.

erected the large mound, made the earthen embankment, buried their dead in the stone graves, and lived in this fortified town as I now feel I have a right to designate it.

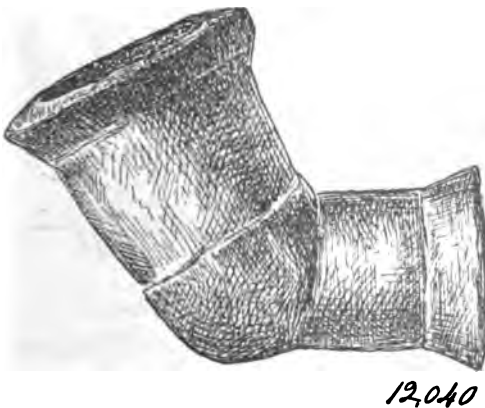
Nineteen of the best defined of these earth circles were carefully explored with very gratifying results, and proved to my satisfaction that the ridges were formed by the decay of the walls of a circular dwelling, about which had accumulated, during its occupancy, such materials as would naturally form the sweepings and refuse of a dwelling of a people no further advanced towards civilization than were these mound-builders of the Cumberland valley. These houses had probably consisted of a frail circular structure, the decay of which would only leave a slight elevation, the formation of the ridge being assisted by the refuse from the house.

Fig. 39.



Fragment of Pottery from grave, Burial Mound within Earthwork. Natural size.

Fig. 40.



Pipe made of Slate, from grave, Burial Mound within Earthwork. Natural size.

After the recent soil within the ridges had been removed, hard floors were discovered upon which fires had been made; while in the dirt forming the ridges, were found fragments of pottery; broken and perfect implements of stone, several discoidal stones, most of which were made of limestone; bones and teeth of animals; charcoal, etc.

On removing the hardened and burnt earth forming the floors of

the houses, and at a depth of from one and a half to three feet, small stone graves were found in eleven of the nineteen circles that were carefully examined. These graves were in every case those of children, and were from one foot to four feet in length. In some the bones were entirely decayed, in others a few of the more solid parts of the skeleton such as the shafts of the long bones, the central parts of the vertebræ, and fragments of the crania were preserved.

The tibiæ of one young child in particular are worthy of remark

Fig. 41.



Pipe carved from Steatite, from Burial Mound within Earthwork.

from their extreme thickness and great curvature. These tibiæ of children are not in the least flattened, though some of the tibiæ of adults from the burial mound are.

These children's graves were found at one side of the centre of the house, and generally, it was noticed, that a fire had been built

over the spot, as shown by the burnt earth and charcoal. From them were obtained the best specimens of pottery found within the earthwork, with shell beads, pearls, and polished stones of natural forms, etc., which were probably playthings. In several of the smaller graves were the metacarpal bones of birds, which may have been given to the children to aid the teeth in perforating the gums, as is stated to be the custom among some of the present Indians.

Three small discoidal stones were picked up in the ridges of as

Fig. 42.



Side view of figure 41.

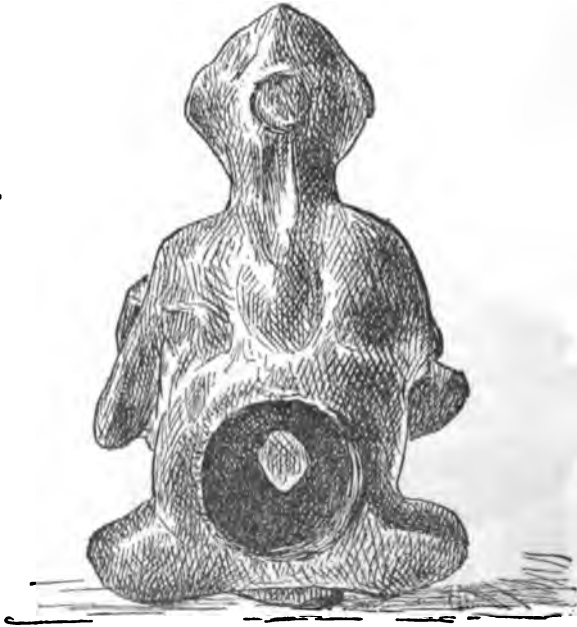
many different houses, and one other was found on the hard floor, while still another was discovered in the burnt earth over a child's grave.

In the dirt forming the ridge of the house designated as No. 3 in my notes, and under the floor of which graves were not found, was a fragment of thick pottery (Fig. 44) with the impression

of a closely woven fabric of coarse threads. Near this was taken out a bowl (12046) with rudely scalloped edges, of which figure 45 is a representation. From the same place was also taken a rude celt (Fig. 46), made of sandstone (12047).

Under the floor of one of the houses was a small grave containing the remains of the bones of two children, and with them the dish (12072), of which figure 47 is a drawing. No other article was found in this grave, over which a fire had been made, and in the

Fig. 43.



Back view of figure 41.

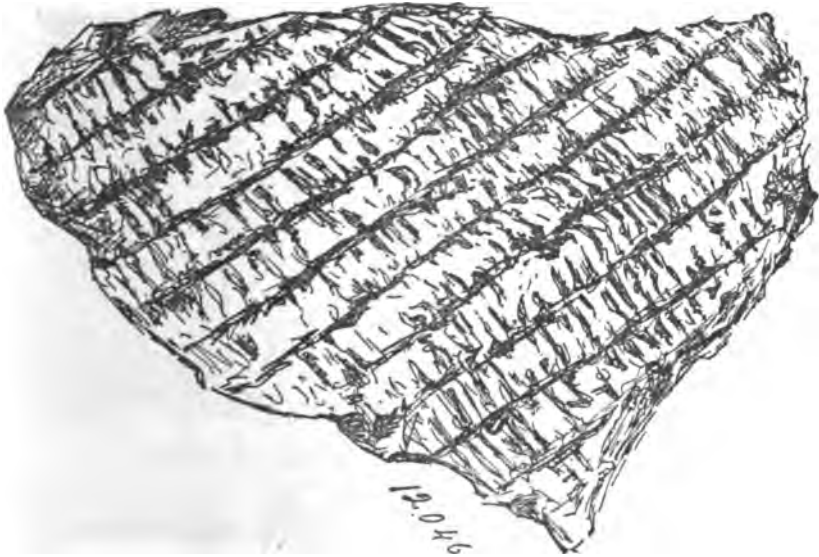
ashes were burnt animal bones, a discoidal stone and several fragments of pottery.

Within the area covered by another house, three burials had taken place, and from these graves were obtained two earthen vessels, a discoidal stone, a dish, and a few shell beads.

Three other houses contained graves of children in which were found several articles worthy of note, and evidently of considerable

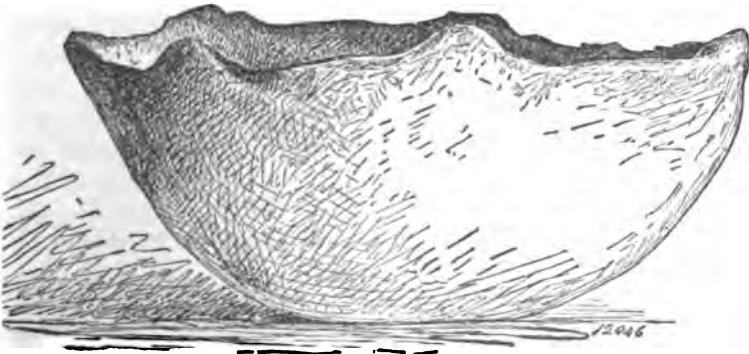
value. Under the floor of one of these houses, two graves were discovered, one of which was made simply by placing two stones

Fig. 44.



Fragment of Pottery from refuse of a House within Earthwork. Natural size.

Fig. 45.



Bowl from refuse of a House within Earthwork. 4.

about eight inches apart, and was without the usual pavement at the bottom, or the covering and end stones. This contained the

remains of an infant buried in ashes, though the bones were not burnt, and two broken vessels of ordinary form.

In the other grave was a similar vessel (12062, Fig. 48), an awl, or pointed implement of bone (Fig. 49), and another made of deer's horn, the leg bone and a vertebra of a bird, and five shells of *Unio*.

Another house, located near the large mound, contained two

Fig. 46.



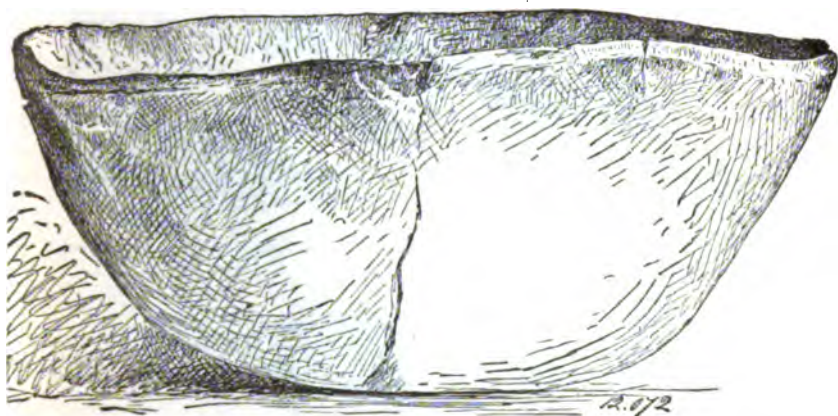
Celt of Sandstone from ridge of House within Earthwork. Natural size.

graves, in one of which was found a water jar mounted on three hollow legs, the cavities of which connect with the body of the jar, while the cross bars between them are solid. This jar (12093) is shown, of one-half its diameter, in figure 50.

The other grave in this house was remarkably rich in relics, and contained an earthen pot (12086), a bone of an animal (12087),

the shell of a *Unio* (12088), two large shells of *Busycon* (12089) from the Southern Atlantic coast, from which the columella had

Fig. 47.



Dish from grave of a child in a House within Earthwork. 4.

been removed, and a large lot of small shell beads (12091), of which six hundred and fifty were collected and many more were in fragments. These beads would have formed a chain several feet in length, as one hundred of them measure eighteen inches. With these shell beads were seven perforated pearls (12092) of large size, among them one which is nearly one-half an inch in diameter; also several handsome pebbles (12090) of quartz, chalcedony, etc., and a piece of the stem of a fossil crinoid.

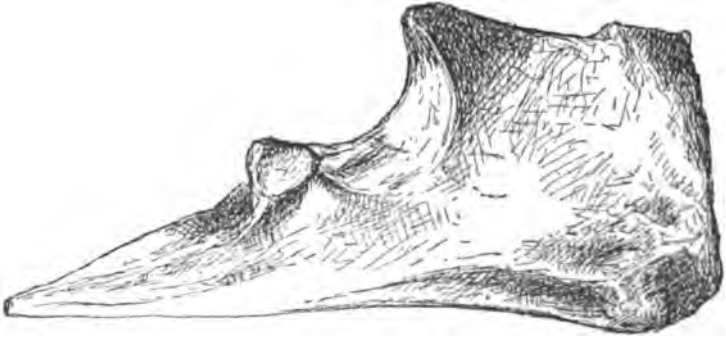
Fig. 48.



Pot from grave of child in a House within the Earthwork. 4.

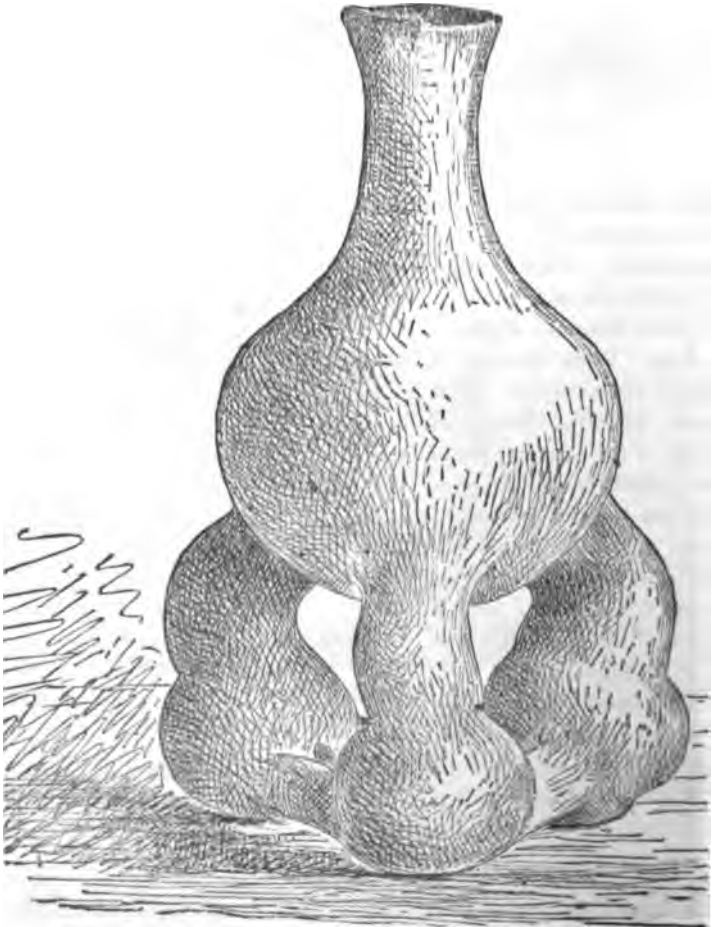
The last of the houses examined, which was also located near the large mound, contained the graves of an infant and of two other children. In the grave of the infant, the only

Fig. 49.



Implement of Bone, from grave of a child in a House within Earthwork. Nat. size.

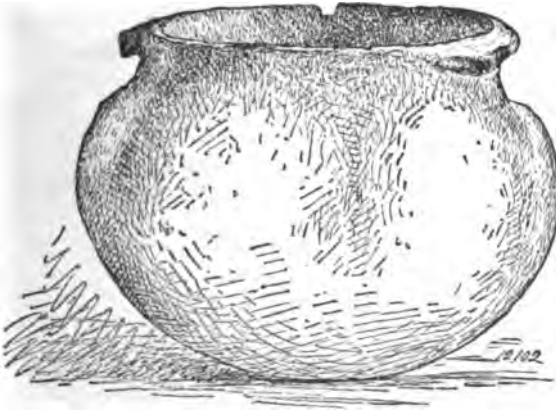
Fig. 50.



Jar from grave of a child in a House within Earthwork. 4.

article found was an earthen pot (12101), represented by figure 51. The second grave contained a dish (12096), and the small pot

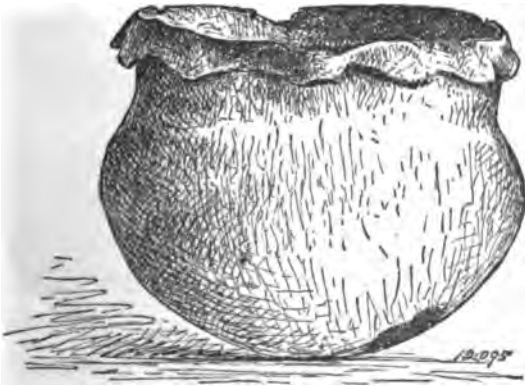
Fig. 51.



Pot from grave of a child in a House within Earthwork. 4.

(12095) with ornamented edges, shown in figure 52. The third grave was remarkable for the three well-made articles of pottery

Fig. 52.

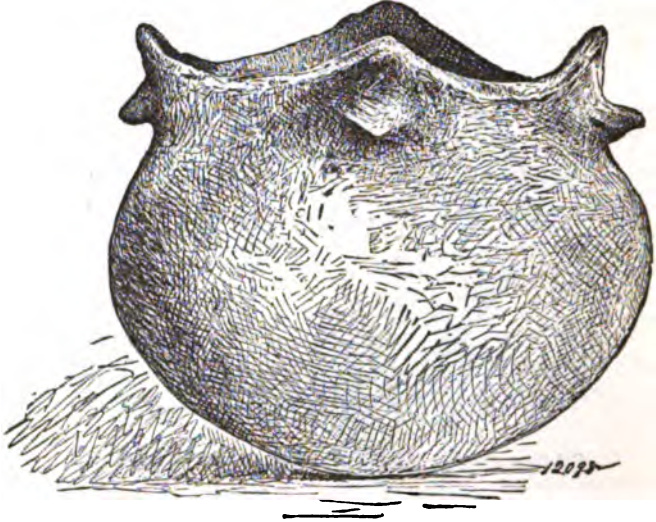


Pot from grave of a child in a House within Earthwork. 4.

which it contained. These are represented, of one-half their diameter, by figures 53, 54 and 55. The pot shown by figure 53, is

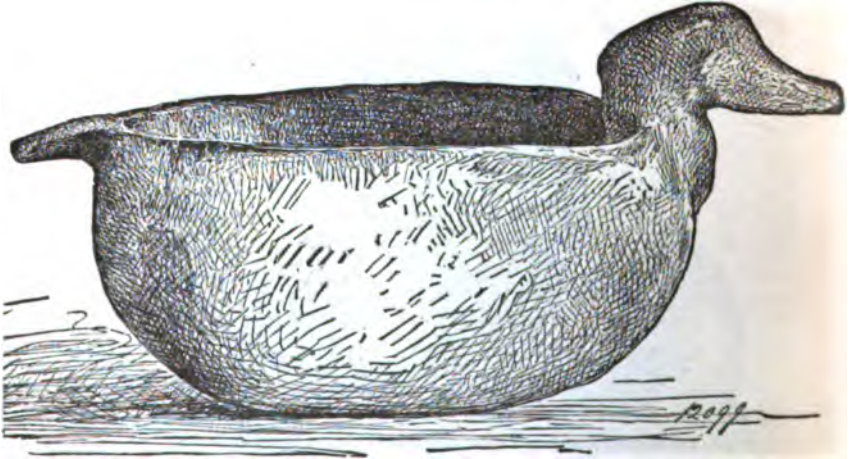
a symmetrical vessel, with deeply scalloped edge and with a pro-

Fig. 53.



Pot from grave of a child in a House within Earthwork. 4.

Fig. 54.



Duck-shaped Dish from grave of a child in a House within Earthwork. 4.

jecting portion under each point of the scallop. Figure 54 is a

well executed design of a duck-shaped bowl, while figure 55 represents a water jar in the form of a bear. This last is the only article of pottery obtained within the enclosure at Greenwood that was not of the ordinary blue gray color, like the majority of the pottery from Tennessee, Missouri, etc. The surface of this jar is

Fig. 55.



Painted Jar, from grave of a child in a House, within Earthwork. 4.

of a yellowish color, and on this had been painted a number of concentric figures, which were perfectly apparent when the jar was first removed from the grave, but, as they had not been burnt in, they scaled off in drying and are now only faintly indicated. This interesting jar, with others that are here figured, is evidence of the

high attainments of this ancient people in the ceramic art, and shows the development reached in native art by people who worked in copper, carved in stone and shell, moulded in clay, wove fabrics of several kinds, cultivated maize, lived in walled, or fortified towns, buried their dead in an extended posture, generally in stone graves, and erected the large mounds of the Cumberland valley, from which they are now known as the Mound-builders.

OBSERVATIONS ON THE CRANIA FROM THE STONE GRAVES IN TENNESSEE.

BY LUCIEN CARR.

ON page 224 of this Report will be found the measurements of sixty-seven crania collected, during the past year, by Messrs. F. W. Putnam and Edwin Curtiss, in the course of a series of explorations undertaken for the benefit of the Peabody Museum. These crania are all from the valley of the Cumberland, and, with but few exceptions, are from the immediate neighborhood of the city of Nashville, Tennessee. Except in one instance (Museum No. 11,918), they were all taken from stone graves, and a large majority of these graves were found in mounds. In fact, the mounds, themselves, were composed almost entirely of these graves arranged in layers, from three to five deep; and the one skull,—an orthocephalic—mentioned above, which seems to have been an exception to the general style of burial, was taken from one of these mounds, where it was found lying between two such graves. Of these mounds, the one at Greenwood near Lebanon, Tennessee, formed one of a group that stood within an earthen enclosure; whilst the others, marked on the table as being “near Nashville,” were situated on the open plain without any such surrounding embankment at present existing. The graves are elsewhere described at length, by Mr. Putnam, and without repeating what he has so well said, we may be pardoned for insisting upon the fact that there was nothing in the manner of their construction, in the condition of the remains, or in the character of the very peculiar pottery and of the ornaments and implements of stone, bone, and shell found with them to indicate that the people who died and were buried here had belonged to different races, or even to different tribes of the same race, unless, perchance, the difference in the form of the skulls should be taken as evidence of such diversity. Similar graves are not unfrequent in the eastern section of the State and the adjoining portions of Virginia, and they are found, usually on the level and singly or in groups of

three or four, in regions as far apart as Kentucky¹ and Georgia, and Missouri² and New Jersey;³ whilst in point of time, they are said to have been in use in southern Illinois, among the Kickapoo Indians,⁴ within the memory of men now living, or but recently dead. They have also been found, elsewhere, in mounds,⁵ but never it is believed in layers, piled one on top of the other and constituting as in this case almost the entire bulk of the mound.⁶ Mr. Lyon did, it is true, in the course of his explorations in Union County, Kentucky, open mounds that contained rows of dead bodies, arranged in tiers, but they were not buried in separate stone graves. In only one or two instances did he unearth bodies that "appeared to have been covered by slabs of the stone forming the pavement set up slanting toward the body with the ends of opposite stones resting against each other, thus roofing the body in."⁷ This would give a sort of triangular, or tent-like shape to the stone coffin, instead of the usual rectangular, or box-like form common in other localities; but aside from this difference in construction, there is nothing to suggest the idea of a different race of people,

¹ During the course of several summers' service in the field as archæologist to the Kentucky Geological Survey, I have repeatedly found such graves, either singly or in groups of three or four, in East Tennessee, southwestern Virginia and in the Green river district of Kentucky. Sometimes they are marked by small cairns, but usually there is nothing but an enclosure of small stones, set on edge and projecting but slightly above the surface, to indicate their presence. In the choice of these burial places there does not seem to have been any method, other than the proximity to stone, suitable for use in building them. I have found them at all levels, from the bottom lands of the river valleys to the tops of the hills; but never far from some outcropping ledge of rock that could be used in their construction. In Powell's Valley, Virginia, extending almost its entire length, there is such a ledge of outcropping limestone, on and near which these graves are quite common, though they were not found elsewhere in the valley. There are, however, in that region numerous caverns, many of which contain human remains. The skulls found in them and in the caves of Kentucky, as is elsewhere noted, do not differ materially from those taken from the stone graves.

See also Smithsonian Report for 1870, p. 377.

² Jones' *Antiquities of the Southern Indians*, pp. 213, *et seq.* New York, 1873.

³ Dr. C. C. Abbott, of Trenton, writes me that "there is a stone grave in the neighborhood of the Delaware water-gap, which is described in a guide book to that locality by L. W. Brodhead." See, also, Mr. E. A. Barber, quoted in *Popular Science Monthly* for Sept., 1877, p. 638.

⁴ Professor Charles Rau, quoted in *Antiquities of the Southern Indians*, p. 220. New York, 1873.

⁵ Smithsonian Report for 1870, pp. 378 and 402.

⁶ The mounds opened by Dr. Joseph Jones, with results precisely similar to those obtained in the course of these explorations, were in this immediate locality and thus confirm the statement. For a most interesting account of the valuable work done by Dr. Jones, see "Explorations of the Aboriginal Remains of Tennessee," published by the Smithsonian Institution. Washington City, 1876.

⁷ Smithsonian Report for 1870, pp. 402-4.

whilst the many points of resemblance notably in the shape and size of the prevailing form of cranium, in the manner in which the dead were buried in layers, though not always, or even generally in stone graves, and, last but not least, in the character of the articles found in them, leave but little doubt as to the identity of the people who built these mounds and buried in these graves. As to whom they were, or to what race they belonged, history and tradition are alike silent; but it is a singular coincidence, to say the least, that the city of Nashville, the centre as it were of this class of remains, stands on the very site of a former Shawnee village⁸ and that this same tribe of Indians, or their congeners⁹ can be shown, on undoubted historic authority, to have occupied each one of the above-mentioned localities in the course of their erratic and checkered career. I am not, however, prepared to assert that they were in the habit of burying their dead in stone graves, or even in mounds, though such customs were common enough among their neighbors.¹⁰

This much seems necessary by way of thoroughly understanding the circumstances under which this exceedingly valuable collection was made. Turning now to the crania and grouping them according to their most obvious characteristics, it will be found that

1st, All are more or less prognathic, and

2d, That there are twenty-nine that show marks of "posterior flattening" to a greater or less extent, and thirty-eight that are either normal, or else the amount of distortion in them is so very slight that it is not believed it will materially affect the general accuracy of the measurements.

Flattened posteriorly, the term generally used in describing this particular class of skulls, is not altogether satisfactory, for the reason that it seems to indicate a certain sameness in the distortion,

⁸ Ramsey. *History of Tennessee*, p. 79. Charleston, 1853.

⁹ The Kickapoos, who occupied the section of southern Illinois in which these graves are found, are included among the Western Lenape, under which head the Shawnees are also placed. *Archæologia Amer*: Vol. II, p. 60.

¹⁰ Since this article was in type, I have had an opportunity of examining a skull found on Big Shawnee Island, in the Delaware River, a few miles above the Water Gap, and forwarded to the Peabody Museum by Dr. Abbott of Trenton. In shape and size, and even in the manner and amount of the posterior flattening to which it had been subjected, there is absolutely no appreciable difference between it and many of the specimens in the collection, now under consideration. As the Shawnee Indians occupied each of these localities, at different times, in the course of their wanderings, and, so far as we know, no other one nation ever did, why may not this be regarded as an important link in the chain of evidence that points to this unfortunate people as the Moundbuilders of the Cumberland Valley?

or flattening, as well in kind as in degree, and to imply that the pressure necessary to produce it had been designedly applied, when, in point of fact, it is probable that nothing was farther from the truth. Still it is accepted for the want of a better term, though it might, perhaps, be more accurate to say of this form of cranium, that the distortion was the result of pressure undesignedly applied. This may seem to be rather a sweeping assertion, but it is believed to be justified by a study of this collection and a comparison of the different specimens with those from Peru that show marks of posterior flattening. So similar are the effects of this process found to be, that but for the difference in capacity, amounting to 111^{cc.}¹¹ in favor of the Tennessee crania, and the accidents of discoloration, etc., resulting from the circumstances of burial, a selection might be made from the posteriorly flattened crania of these widely separated localities, that would be absolutely indistinguishable. With but slight alterations, the language applied to one might be safely used in describing the other. Undoubtedly, if only the more aggravated cases of distortion be considered—those for instance in which the occipital and parietal bones have been flattened into one plane and that plane pushed far forward of a vertical line, as in Museum, No. 12,799,—no craniologist would feel justified in describing it as the result of accident, or the effect of force undesignedly applied. But if, on the contrary, we begin at the other extreme—at those cases in which the distortion, at best but very slight, is only revealed by the development more or less unequal of one or the other of the parietals, or perhaps by a slight flattening of the occiput just above the protuberance—and carefully note the intermediate steps by which one form insensibly merges into the other, it will be found impossible to draw other than an arbitrary line of demarcation between them. The same causes that produced one must have produced the other; and if, as is generally admitted, the less distorted forms may have been caused by the manner in which the child was strapped to the cradle board,¹² or even by the habit of “laying the child to sleep from earliest infancy on its side with a persistent adherence to one

¹¹ The average capacity of fifty-six crania from Peru, is 1230^{cc.} = 75 c. inches. Fourth Annual Report Peabody Museum, p. 18.

¹² Morton. *Crania Americana*. p. 115. London and Philadelphia, 1839. Dr. Thurnam in *Memoirs* read before the Anthropological Society of London. Vol. I, p. 157, etc., etc.

side,"¹³ there does not seem to be any good and sufficient reason why in those cases in which the distortion is greater, the same causes, operating for a longer period, may not have produced the same results. It is, after all, but a question of time and the amount of force exerted, and any attempt to fix a point beyond which it can be affirmed that this pressure was applied for the deliberate purpose of producing a certain form of distortion, must be arbitrary.

Bearing upon this point, though the evidence is negative and not entitled to much weight, is the fact that in all this class of skulls the different forms of distortion seem to have been produced at random. There is no effort to attain any particular form, as it is fair to assume there would have been, if any such had been recognized as a type of beauty, or mark of honor. Nowhere is there any apparent unity of design, any evident application of force for a specific purpose; but on the contrary, we find just such a confusion of forms as might be expected to result from the hap hazard practice of strapping babies to a cradle-board. In some of the skulls, all the bones of the posterior portion of the head are more or less flattened; in others, it may be one or both of the parietals with, perhaps, the upper portion of the occiput; whilst again in others, the right, or left half of the occipital with the adjoining part of the parietal seems to have been forced forward, thus giving to the skull, when seen from above, a decidedly lop-sided appearance. Amid such confusion, it is impossible to effect any classification save upon the very indefinite, general basis of "posterior flattening." This may mean very much, or it may be found to signify very little; but in either event it is to be regarded as accidental and cannot be accepted as a race or tribal characteristic. Certainly it was not so considered by the early chroniclers, since nowhere, so far as the writer knows, is there any evidence that it was ever, intentionally, practised by any of our American Indians. If it had ever obtained to any extent among them, it is hardly possible that it would have escaped all mention on the part of writers who have left us any quantity of evidence as to the intentional depression of the frontal and the means taken to bring

¹³ Wilson, *Prehistoric Man*, Vol. II, p. 226. London, 1876. "Sometimes the flattening inclines to the right, sometimes to the left side; — a difference, perhaps, due to the custom of the mother as to suckling the child at the left or right breast." Dr. Thurnam, *Memoirs of the Anthropological Society of London*, Vol. I, p. 157. "I have observed the effects of pressure in flattening the occiput, in white infants, who, during protracted illness, have lain long in one position." Jones, *Aboriginal Remains of Tennessee*, p. 17.

it about. We have accounts, it is true, any number of them, of the application of pressure to both the frontal *and* occipital, at one and the same time, and it is possible that a moderate amount of pressure applied anteriorly, as was the case among the Choctaws, might aggravate the parieto-occipital distortion; but nowhere do we find any account of the application of force to the back of the head alone, for the purpose of moulding that particular portion of the head into some desired form.

For these reasons it is believed that this custom of flattening the head posteriorly, whether found in Peru, Europe, or the Mississippi valley, is simply accidental,—the result of pressure undesignedly applied,—and can only be regarded as evidence of the extensive use of the cradle-board, but as furnishing no proof, beyond this, of the antiquity or identity of the people among whom it is found to have existed.

Whilst upon this point, it may, perhaps, be as well to state that there is not in this entire collection a single skull showing indisputable evidence of an attempt to depress the frontal, or to flatten the head *anteriorly*. Two, and only two of them, exhibit the least trace of this process, and in them it is so exceedingly faint as to require some aid from the imagination in order thoroughly to believe that the attempt was ever made. In all the others, the foreheads though somewhat retreating and in many instances far from symmetrical, are more or less rounded or arched, and apparently never felt the pressure of a sand bag,¹⁴ or any other method of depression.¹⁵ This fact would seem to exclude from the list of possible builders of these stone graves, the Natchez,¹⁶ Chickasaws,¹⁷ Choctaws¹⁸ and any and all other tribes in which the custom of intentionally depressing the frontal can be shown to have prevailed. Granting that either of these tribes buried here, and it does not seem within the bounds of probability that a collection of this size could have been gathered together without containing a percentage of skulls showing the particular form of distortion which they are known to have practised. That there might be no chance of mistake, careful comparison has been made with crania from Peru,

¹⁴ Adair, *History of the American Indians*, p. 284. London, 1775.

¹⁵ Du Pratz, *History of Louisiana*, Vol. II, p. 162. London, 1763.

¹⁶ *History of Louisiana*, l. c.

¹⁷ *Memoir of the Sieur de Tonty*, French's Historical Collections of Louisiana, Part I, p. 60.

¹⁸ Adair, *Hist. Amer. Indians*, p. 284. Bartram's *Travels*, p. 517. Philadelphia, 1791.

the Northwest Coast and the Ohio valley, in which this depression of the frontal is marked, and it is not believed that the two forms can ever be confounded. It is, indeed, true that the method by which this particular form of distortion is brought about, and which we find described in Adair¹⁹ Du Pratz,²⁰ and others of the early writers, does also, sometimes, cause a flattening of the posterior portion of the head similar to that found in the skulls taken from the stone graves, but it also causes a flat retreating forehead, and a levelling or depression of the parietals along the line of the sagittal suture, that differs as widely as possible from the rounded forehead and the high, arched crest of the other. In a word, the two forms are separated by the whole extent of the impassable gulf that exists between the accidental compression or forcing forward of some portion of the posterior part of the head and that intentional depression, or forcing backward of the frontal, which results from the application of force exerted deliberately and for the attainment of a specific purpose. But it is unnecessary to pursue this branch of the subject farther, especially as there is no intention of entering into a discussion of the question, who constructed these graves? The theme is tempting, and at some future time it may occupy our attention, but for the present it must suffice to protest, however feebly, against the fallacious style of investigation that is wont to assume the identity of race from the accidents of a custom.

Returning from this long digression and dividing the crania according to the features that distinguish the sexes, we find among the thirty that are sufficiently perfect for us to take their capacity, that there are seventeen which are probably those of females and thirteen, of males. All are adults with perhaps one exception, and that one, to judge from the dentition, may be anywhere from fifteen to twenty years of age. The mean capacity of the seventeen females is 1250^{cc.}, of the thirteen males, 1459, leaving a balance of 209^{cc.} in favor of the latter. The mean capacity of the whole is 1341, which is less than that of the American Indian, 1376^{cc.}, but greater than the Peruvian, which is only 1250^{cc.}, and agrees closely with the average of the collection, made by Dr. Jones, in this same neighborhood. These differences and resemblances, however, can be best seen when the measurements

¹⁹l. c. p. 284.

²⁰l. c. Vol. II, p. 162.

are arranged in tabular form, and for this reason we have brought them together in Table I, adding other measurements that are of interest, and including crania from other localities.

TABLE I.—MEAN MEASUREMENTS OF CRANIA.²¹

		Capacity	Length	Breadth	Height	Index of Breadth	Index of Height	Width of Frontal	
1	²² Mean of 67 Crania from stone graves in Tennessee.	³⁰ 1341	⁶⁷ 166	⁶⁴ 141	⁴⁰ 142	.852	.851	91	Flattened posteriorly
2	Mean of 21 Crania from stone graves in Tennessee.	¹⁴ 1335	²¹ 165	²¹ 143	²¹ 141	.872	.854	....	"
3	Mean of 38 Crania from a mound in Kentucky.	²⁴ 1313.33	³⁷ 165.4	³⁶ 142.28	³⁶ 132	.857	.769	92.7	"
4	Mean of 10 Crania from Caves in Kentucky and Tennessee.	² 1382	¹⁰ 168	⁸ 110	⁴ 143	.831	.823	90	"
5	²³ Mean of Crania from Mounds in United States.	³⁹ 1374	¹¹⁸ 168	¹¹⁸ 145	⁷⁸ 139	.867	.821	....	"
6	Mean of 18 Crania from Florida.	⁷ 1375.7	¹⁰ 173.5	¹⁰ 145	¹¹ 135.6	.830	.777	98.47	.....
7	Mean of 103 Crania from Santa Barbara, California.	1248	175	136	129	.779	.741	98	.....
8	Mean of 50 Crania from Islands off Santa Barbara, Cal.	1326	184	133	128	.723	.680	93	.....
9	New England.	.....	179	136	136	.759	.759	....	.....
10	Iroquois.	.....	185	137	137	.740	.740	....	.....
11	Algonquin.	.....	184	141	136	.766	.739	....	.....
12	Algonquin — Lenape.	.....	180	140	137	.777	.761	....	.....
13	E-quimaux.	.....	184	132	138	.717	.750	....	.....
14	Tschuktehi.	.....	176	135	137	.767	.778	....	.....

²¹ The measurements given in this table are taken as follows:—No. 2 from Jones' Aboriginal Remains of Tennessee, p. 109; No. 5, from the Check List of the Army Medical Museum; Nos. 9, 10, 11, 12, 13, 14, from Wilson's Prehistoric Man, Vol. II, p. 197, and the rest from crania in the collection of the Peabody Museum.

²² The small figures over the line in this and the succeeding columns, running from left to right, refer to the number of Crania measured. These measurements are given:—Capacity in cubic centimetres; length, breadth, etc., in millimetres.

²³ The check list from which this average was prepared, was issued by the Army Medical Museum for use during the International Exhibition of 1876, at Philadelphia.

In the above table and thus far in our study of the collection, we have dealt altogether with mean measurements, or with those divisions that could be easily noted by the eye. This method of proceeding is sufficiently accurate for the purpose of comparing

Since then there have been numerous additions to the collection, though they are not included in the above table of Mean Measurements. I am indebted to Dr. G. A. Otis for the following interesting memorandum, showing the distribution and distortion of the Mound Crania now in that collection:—"There are 174 Crania from Mounds in the collection of the Army Medical Museum, 57 of which are normal, 104 flattened, and 13 fragments, the normal and abnormal character of which cannot be ascertained. They were collected in the following localities:

LOCALITY.	Normal.	Flattened.	Fragments.	Total.
Dakota	18	.....	.....	18
Wisconsin . . .	2	.....	.....	2
Iowa . . . . .	.....	5	1	6
Illinois	3	.....	.....	3
Indiana	5	.....	.....	5
California . . .	4	.....	2	6
Utah	1	4	.....	5
Missouri	1	.....	.....	1
Kentucky	6	21	3	30
Virginia . . . .	.....	1	.....	1
Tennessee . . .	1	6	.....	7
Mississippi . . .	3	44	1	48
Louisiana	1	6	.....	7
Alabama . . . .	.....	.....	1	1
Florida	12	17	5	34
	57	104	13	174

the capacity, etc., but it fails to give us anything like a correct idea of those measurements that vary with the amount of distortion, or of the differences between the groups of skulls that go to form each one of the above averages. For instance, in group No. 1 of the above table, we have the mean breadth of the Tennessee crania given as 141^{mm.}, and the index of breadth as .852, or .852 of the length, assuming that to be a thousand. This brings the entire collection within the class of brachycephalic,²⁴ or short heads, and is unquestionably accurate so far as it goes. It belongs, however, to that class of half truths that are sometimes as pernicious as error itself, inasmuch as it omits all mention of the fact that there is a large percentage of these skulls, which must be ranked as among the long or the oval heads, or in scientific nomenclature, among the dolichocephali or the orthocephali. These groups are separate and distinct, and should be kept so in any comparison that aims at accuracy, otherwise the cephalic index becomes a variable quantity, and the classification of the same skulls will vibrate from short to long, accordingly as one or the other form may be made to preponderate. To obviate this difficulty as far as possible, it is proposed to divide these crania into the three groups according to their relative proportions of breadth and length. Apparently this is a very simple process, and if all the skulls were perfectly normal and symmetrical it would give us results that are absolutely accurate. But the reverse of this is the case with the collection now before us, and consequently we are met, at the very outset of our classification, with the startling fact that in a collection that contains a percentage of distorted skulls, absolute accuracy is unattainable, for the reason that there is no method by which the extent of such distortion can be measured. It will not do to trust to the eye alone, because due allowance cannot always be made for what may be termed the personal equation of the person making the measurements. In taking the cubic contents of a skull, this can be equalized by giving the average of a series of measurements; but should it become necessary, at any time, to pronounce upon the amount of distortion in any particular skull,

²⁴The classification, omitting the subdivisions, is that adopted by Dr. Thurnam Professors Huxley, Dawkins and other English authorities, and may be found in "Cave Hunting," by W. Boyd Dawkins, p. 190. London. 1874.

I. "Dolichocephali, or long skulls with cephalic index at or below .73.

II. Orthocephali, or oval skulls with cephalic index from .74 to .79.

III. Brachycephali, or broad skulls with cephalic index at or above .80."

in order to effect a classification according to that standard, the eye cannot always be trusted as a sure and safe guide. The want of symmetry in crania is so very general, and in many of those that have been flattened posteriorly the extent of the distortion, even when it is admitted to be present, is so exceedingly small, that probably no two craniologists would agree in their judgment as to a number of skulls. Even the same person might, not unlikely, find it difficult to reconcile the decisions of one day with those of another. The callipers, it is true, can be trusted to give us the precise present status of any skull, i. e., whether dolichocephalic, brachycephalic, or belonging to some one of the intermediate subdivisions; but it is powerless to estimate the extent of the compression, often very slight, by which the relative proportions of any given skull may have been so changed as to transfer it to a class to which it did not originally, rightfully belong. That this is an incident of frequent occurrence will not be denied by any one who has ever had occasion to note the imperceptible stages by which these different forms of skull grade into each other. But small as the amount of this distortion in each case may be, and however slight its effect on the general average, yet, as it always acts in one direction and its force is cumulative, a moment's reflection will show that it may become a prolific source of error. Thus, whilst a very slight amount of posterior flattening may sometimes suffice to transform a dolichocephalic skull into an orthocephalic, or an orthocephalic one into a brachycephalic, yet by no possibility *can it ever reverse the process* and transform a brachycephalic skull into a dolichocephalic, or even into an orthocephalic of high grade. The tendency is always in one and the same direction, and its effect is ever to increase the number of short, or of oval heads at the expense of those that are longer.

Recognizing these difficulties in the way of attaining accuracy in classification, and at the same time feeling the necessity of eliminating certain exaggerated cases of distortion from the calculations, it has been thought desirable, as a temporary expedient, to establish a purely arbitrary fourth class of flattened skulls, to which is relegated all those having an index of .900 and over. There may be and probably are, perfectly normal skulls with an index equalling this, but in all such cases, it has been the aim to keep them apart, and to confine this class of flattened skulls to those in which the judgment of the eye and the verdict of the calipers are

found to be in accord. It must not, however, be inferred, that this group includes all the most aggravated cases of distortion, or that all the crania in the other classes are entirely free from such malformation. Take for instance a brachycephalic skull with a high index, say .880, and having fixed the point of distortion at .900, it will evidently require a much less amount of posterior flattening to bridge over this interval than to carry an orthocephalic skull with low index up to the limit of brachycephalism, or say from .750 to .800. This is evident in theory, and though in practice it is perhaps difficult or impossible to verify it, as there are no known methods of measuring the extent of the flattening, still, as a fact, there are crania in the orthocephalic and brachycephalic groups, in which the deformity, measured by the eye, seems as great, though not always displayed in the same direction, as is to be found in the average of the flattened skulls. Neither must it be supposed that all the crania in the other classes are free from marks of posterior flattening. Probably not a third of the whole collection can be said to be perfectly normal, and certainly not the half, even of that number, would be pronounced symmetrical. Still, in the case of those classed as dolichocephali and orthocephali, the extent of the flattening is exceedingly small and as it is usually above, or on one side of the occipital protuberance, through which and the glabella our measurement of length is taken, it is not believed that it will materially affect the accuracy of the result. Among the brachycephali, such immunity is not claimed. Some of them are undoubtedly normal or but very little flattened, whilst others exhibit marks of distortion to a greater or less extent. It is even probable that some skulls naturally orthocephalic may have been transferred to this class by this process. Be this as it may, it is believed that the subdivision of this group by limiting the range of distortion, has narrowed the chances of error, and that the measurements are a close approximation to the truth. Still, as a matter of fact, it must be admitted that the process of flattening the skull posteriorly does shorten and broaden the head, and, consequently, it may have raised the cephalic index of this group though not, it is believed, to any very great extent. As to the fourth class or flattened skulls, distortion, among them, "goes without the saying." It must not be forgotten, however, that this subdivision is purely arbitrary and is introduced merely for the purpose of elucidating

some points that will arise hereafter. If it be considered objectionable, the last group, No. 4, of flattened skulls may be left out of our calculations altogether. The effect of this will be, simply, to tone down the contrasts of the brachycephali (No. 3) with the other classes of skulls (Nos. 1 and 2), and thus strengthen any conclusions that may be based on such contrasts.

TABLE II.—MEAN MEASUREMENTS OF 67 CRANIA
FROM STONE GRAVES IN TENNESSEE.

		No. of Crania.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Index of Breadth.
1	Dolichocephali.	5	1325	184	132	142	.716	.775	94	.730 and under.
2	Orthocephali.	18	1346	172	134	141	.775	.819	89	.740 @ .800
3	Brachycephali.	29	1284	185	141	142	.856	.865	90	.800 @ .900
4	Much Flattened.	15	1461	156	152	145	.973	.907	93	.900 and over.

An examination of the above table will show that there are in this collection five (5) dolichocephalic, eighteen (18) orthocephalic, twenty-nine (29) brachycephalic and fifteen (15) that we have classed as flattened skulls. They range from a cephalic index of .716 among the dolichocephali to .856 among the brachycephali, or accepting the classification of the English authorities, from the subdolichocephalic to a high grade of brachycephalism. Names, however, are of but little import; the one, central fact is to be found in the presence, in these graves, of skulls which, after excluding those tabulated as distorted or much flattened, are shown by their measurements to belong to the two extremes of classification, and which cannot be brought into the same group without doing violence to all ideas of craniology. If the terms dolichocephalism and brachycephalism mean anything, then those two forms of skulls are found here, and there is no method of measurement sufficiently elastic to include them both under one head. This fact is by no means new or novel, though it has not been many years since Dr. Morton and anthropologists of his school stoutly maintained the uniform brachycephalic type of crania among all the

American aborigines except the Esquimaux. Of late years, however, the contrary opinion, so ably advocated by Dr. D. Wilson, has been steadily gaining ground, and to day there is but little hazard in saying that it is generally received. But the evidence, furnished by a study of this collection, seems to lead still farther, and we are required not only to admit the existence of different forms of skulls, as there well might be in different tribes, but also to conclude that they are to be found among the same people, or people living under the same tribal organization, much after the fashion in which they are, to day, known to exist among the composite peoples of our great commercial cities. This is hardly in accord with the opinions generally held as to the purity of race, in prehistoric times,²⁵ but it seems impossible to avoid the conclusion, if it be admitted that the fact that these skulls were found buried together indiscriminately, in the same style or set of graves, in the same mound, and so far as we can judge, at or near the same time, is any proof that they belonged to people of the same tribe and race. In the case of Museum No. 11,860, the evidence is even stronger, as in this instance a normal dolichocephalic skull and a brachycephalic one, slightly flattened posteriorly, were found buried in the same stone grave, in a mound, and under circumstances that make it impossible that the interments could have been made at different times. This mode of burial could hardly have taken place except among members of the same family or *gens*, or at least members of the same tribal organization, and the argument as to the probable identity of race is certainly of equal weight.

It is, of course, possible that the skulls which are found to differ so widely from the prevailing type, may have belonged to members of different tribes. The custom, almost universal among the American Indians, of absorbing the remnants of conquered tribes,²⁶ would account for much of this diversity, and as they lived in a constant state of warfare,²⁷ their opportunities in this

²⁵ "This" (variation of skull form) "is due to our very abnormal conditions of life, and to the mixture of different races brought about by the needs of commerce, as in Manchester and Vienna, as is pointed out by Mr. Bradley.

In prehistoric times neither of these causes of variation made themselves seriously felt. There was little if any peaceful movement of races, but war was the normal condition, and society was not sufficiently advanced to remove man from the influence of his natural environment." W. Boyd Dawkins, *Cave Hunting*, p. 190. London, 1874.

²⁶ Du Pratz, *History of Louisiana*. Vol. II, p. 157. *Arch. Amer.*, Vol. II, p. 95.

²⁷ "We cannot live without war. Should we make peace with the Tuscaroras, we must immediately look out for some other, with whom we can be engaged in our beloved

line must have been magnificent. If to this be added the frequency of adoption²⁸ and intermarriage,²⁹ a strong case is made out in favor of this explanation. But admitting all that can be said in its favor, and it may still be doubted whether these factors are of sufficient importance to produce the immense results here seen. Out of a total of sixty-seven crania which, taken as a whole, belong distinctly to the brachycephalic type, there are twenty-three, or over thirty-three per cent. that cannot be considered as coming within that group. This is a large percentage, and it may well be questioned whether it is not too great to have been produced save by causes that must have been at work through a long series of years, or upon an exceptionally large scale. Upon this point, however, speculation is idle. Craniologists may well differ as to how this state of affairs was brought about, but as to the main fact,—the existence of different forms of skulls, even among people living under the same tribal organization—there cannot be two opinions, in view of the rapid accumulation of evidence within the past few years.

But whilst this classification of crania according to the cephalic index gives us the relative measurement of breadth and length, and of course varies as either member of the proportion is increased or diminished, it does not furnish the actual breadth or height of any skull, or even the mean of the whole. To ascertain these we must again go to the tables, and referring to the measurements as given above, we find that the breadth ranges from a mean of 132^{mm}. among the dolichocephali, to 152 among those that are distorted, or in class 4. As has been said before, the crania in Nos. 1, 2 and 3, show but little if any marks of distortion, and consequently the measurements there given may be accepted as a close approximation to accuracy. In No. 4, however, or among the flattened crania, this state of affairs no longer exists, and whilst the figures there do not give us any idea of the original form of these skulls, yet they do accurately indicate the present measurements, and, by comparison, may help us to form some conception of the effects of this method of distortion. That it increases

occupation." Reply of the Cherokees to an offer to bring about a pacification between them and the Tuscaroras. Ramsey, *History of Tennessee*, p. 83. Charleston, 1853. *Archæologia Amer.*, Vol. IV, p. 90. Schoolcraft, Vol. II, p. 84, etc., etc.

²⁸"Captives taken in war were either put to death, or adopted into some gens. Women and children taken prisoners usually experienced clemency in this form." Morgan, *Ancient Society*, p. 80. New York, 1877.

²⁹Tecumseh was the son of a Shawnee father, and Creek mother. Schoolcraft, *Indian Tribes of the United States*. Vol. V, p. 45.

the width of the skull can be seen at a glance. Compared with the brachycephali, the class that is nearest to them in shape and size, the mean breadth of the crania in this group is (11) eleven^{mm}. greater, and these figures may be considered as representing roughly the measure of the distortion of these skulls in this particular direction. Among themselves, the variation is great, though diminished by the limitations arbitrarily fixed on the class as a whole. It extends from 140^{mm}. to 169, and the cephalic index ranges from .900 to 1.019, though the broadest skull is not always the one having the highest index.

In this collection there are two that are broader than they are long, or with an index of over a thousand. A third, with an index even greater than either of these, amounting to 1283. has been omitted from our calculation, as, after a careful examination, it was thought that possibly the length might have been shortened by *post mortem* compression. On this point, it is proper to state that the utmost care has been observed, though in those cases in which the point of posthumous deformation coincides with that of cradle-board distortion, it is, sometimes, difficult to say exactly how much is due to one cause and how much to the other, admitting that both have been instrumental in modifying the original form of the skull. In the present collection there are three such coincidences, but for reasons given above, when treating of posterior flattening, it is not believed that the distortion has been such as to impair the correctness of the measurements. As a rule, the conditions of burial in stone graves or coffins, are such as to protect these skulls from any very great amount of superincumbent weight, whilst, as a matter of fact, in those instances in which the malformation seems to have been brought about by a comparatively slight pressure acting upon a body rendered soft and pliant by incipient decay, the process is found to have been altogether too effectual; as that portion of the cranium, which is supposed to have been subjected to the pressure, is usually, entirely missing. But this whole question of posthumous distortion is as yet but imperfectly understood. Perhaps the most that can be said is, that given certain conditions and it is almost sure to follow. Dr. George A. Otis, Curator of the Army Medical Museum, speaking of some crania that had been exhumed from the Vicksburg mounds by Surgeon Ebenezer Swift, U. S. Army, says in a private note to the writer, "the skulls were so soft that they would assume almost any shape given them on exhumation. Many of them were sent

to Washington in the wet clay in which they were found and I had scalar demonstration of the facility with which *post mortem* deformation was possible." There is no higher authority on matters craniological than the accomplished Curator of the Army Medical Museum, and whilst fully admitting the force of this statement, I feel great hesitancy in venturing to intimate a doubt as to whether there may not be some danger of overrating the frequency with which the conditions necessary to bring about post mortem distortion are supposed to occur. Within a few weeks, the writer has had occasion to examine the very valuable collection of crania now in the Peabody Museum, and out of one hundred and fifty skulls dug from graves in California and the islands off its Southern Coast, there is not one that shows any marks of posthumous distortion, though the evidence of posterior flattening is more or less common. In the same collection, there are one hundred and two skulls from Italy, some of them antedating the Christian Era. Among these are a few with the peculiar lop-sided appearance found in crania from Peru and the valley of the Ohio, which is supposed to be one of the forms of distortion resulting from the use of the cradle-board, but no marks of *post mortem* deformation. This is of course negative evidence again, but in view of the fact that these skulls, selected at random, were buried under circumstances as likely to produce a posthumous change of shape as any that we can expect to find, may it not be considered as one of those rare instances in which it is permitted to argue the general scarcity of a form from its absence within certain, comparatively narrow limits? But there is no intention of entering upon this matter, and even the little that has been said has been with a view of showing that we were fully aware of the possibility of error resulting from this cause, rather than from any desire or expectation of influencing opinion either way. Thanks to the friendly word of caution from Dr. Otis, and to the circumstance of the interments in stone graves, it is believed that danger of error in this direction has been reduced to a minimum; and this opinion is confirmed by the fact that the few specimens in this collection, in which the distortion can by any possibility be supposed to have resulted from causes acting after death, can be duplicated by others from Peru and elsewhere, which, so far as we are able to judge, are absolutely free from any and all such indications of *post mortem* pressure.

Referring to the measurements of height, we find that among

the flattened crania (class 4) it is 3^{mm}. greater than among either the dolichocephali or the brachycephali, both of which are higher than the orthocephali. At first, it was thought that this slight increase of height might be due to the process of flattening the head posteriorly, as suggested by Dr. Morton³⁰ and Prof. Busk.³¹ But on a careful study of the collection, it was found that this group was largely composed of male skulls, and it is believed that this superiority may, possibly, be due to that fact. This conclusion is borne out by a comparison of this collection with that obtained by Dr. Jones,³² from the same neighborhood, in which the height of the much flattened crania, or those having an index of over .900, is found to be 4^{mm}. less than the brachycephali, the group nearest to it, whilst that is smaller than the orthocephali, thus precisely reversing the results obtained above. It is possible, that in this latter instance, the inferiority may be due to the predominance of female skulls, just as, in the former case, a preponderance of male skulls turned the balance the other way. On this point we are in the dark, as there is no division of these crania, by Dr. Jones, on the basis of sex, though the importance of this element as a factor in swelling or diminishing the aggregates within certain limits, cannot be over estimated. Dividing his collection according to the formula given above and reducing his figures to the metric system, we find the following results, which are of much interest for purposes of comparison.

TABLE III.—MEAN MEASUREMENTS OF DR. JONES' COLLECTION OF 21 CRANIA FROM STONE GRAVES IN TENNESSEE.

		No. of Crania.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	
1	Dolichocephali.	W	A	N	T	I	N	G.	.....
2	Orthocephali.	5	1361	173	134	145	.772	.836	.....
3	Brachycephali.	8	1387	168	143	142	.852	.844	.....
4	Much Flattened	8	1323	154	147	138	.945	.885	With an index at or over .900.

³⁰ *Crania Americana*, page 116. Philadelphia and London, 1839.

³¹ *Journal of the Anthropological Institute* for April, 1873, p. 92.

³² *Aboriginal Remains of Tennessee*, p. 110.

In the above table it will be seen that the dolichocephali are altogether wanting, and that the percentage of orthocephali is something less than in table II. The mean measurements, however, as given above and in Table II correspond very closely, as was to have been expected, when it is remembered that the two collections were made in the same neighborhood, and consist so far as we can judge, of the remains of the same people. There are, however, some minor differences, as will be seen by comparing the two tables, but it is believed that they can be accounted for by the accidental grouping of the crania on the basis of sex. Thus for instance, the capacity of the orthocephali in table III is found to correspond most closely, not with the same group in table II, but with the brachycephali, and as this latter class is largely composed of females, it is fair to presume that there exists a similar state of affairs among the former. Other resemblances and contrasts will doubtlessly be found, growing out of a comparison of these measurements, but it is believed that they admit of ready solution, and therefore do not call for any special mention on our part.

There are, however, other features connected with these crania which are worthy of attention, though not, perhaps of any ethnical significance. Some are anatomical, others the result of morbid conditions, and others, again, may be partly due to the custom of flattening the head posteriorly. Thus, of the 67 crania in this collection, we find that

WORMIAN BONES are developed in twenty-one, or nearly thirty-three per cent., distributed as follows: two among the dolichocephali, seven among the orthocephali, six among the brachycephali, and six among those we have classed as much flattened. If to this number be added the five each, among the orthocephali (2) and the much flattened (4), and the six found among the brachycephali (3) in which this suture was so very irregular and complicated as to show a decided tendency to the development of these extra bones, the percentage will be largely increased. In nine of these twenty-one, the number of extra or intercalated bones is limited to one,—the Inca bone as it is called,—situated at the apex of the occiput. In this shape it is found in three instances among the orthocephali, four among the brachycephali and one each among the flattened skulls and the dolichocephali. In the latter specimen besides the Inca bone at the apex of the occi-

put and wormian bones in the lambdoidal suture, there is also an extra suture connecting the lower posterior angles of the two parietals, thus dividing the occiput into two parts of which the upper is the larger. In two others, making twenty-three in all so affected, numbered respectively No. 11,889 and 11,921, these extra bones are found in the coronal suture, near the crossing of the temporal ridge. In the latter specimen there were two such irregularities, one on each side; in the former, only one and that on the left side. It is rare that they are found in this suture, though there are specimens in the Peabody Museum from Peru and the Northwest Coast, the latter much flattened anteriorly, that have such intercalated bones, similarly placed. Whilst there can be no doubt that the ratio of these bones in the crania of this collection, is very large, yet they are distributed throughout the different groups so evenly and in such manner that the process of flattening the head posteriorly cannot be said, in this instance, to have had any effect in increasing their development.

Sutures.—In eighteen the coronal suture (usually on both sides) does not extend below the temporal ridge, and the speno-frontal and speno-parietal is obliterated, so that at or near the point of union, complete ossification has taken place, and the parietal, frontal and sphenoid form but a single bone. This peculiarity is not confined to any age, or sex, or form of skull, but is distributed throughout the different groups, with the percentage largely in favor of the dolichocephali, as all five of those skulls are so affected. A similar condition of affairs is found in seven of the one hundred and fifty Californian, and in fourteen of the one hundred and two Italian crania examined. In sixteen, we find one or more of the sutures closed, as follows: in eight, the coronal and sagittal are both obliterated, either wholly or in part; in six, the sagittal alone; in one, the coronal; and in one, all three are closed. Among the dolichocephali, two have the coronal and sagittal so affected, and in one, the sagittal alone is closed. So far as we can tell, the crania in this latter group belonged to people much beyond the prime of life, and to this fact, no doubt, may be ascribed the closing of the sutures. In one skull, No. 12,303, the squamosal suture is closed; a thin scale of bone seems to have grown over it, and on this, in high relief, is impressed much of its irregular outline. In the three skulls Nos. 11,824, 12,797 and 14,003, that show marks of the greatest compression,

each having a cephalic index of over one thousand, and being respectively one, the skull of a youth, and the other two, of persons in the full vigor of manhood, all three of the sutures are open.

Small bony tumors are found in the outer opening of the ear, in seven of the brachycephali, and in two among the flattened skulls of class four; but they are not present in either of the other groups. This percentage, a little more than one in seven, is greater than Prof. Wyman found among the Peruvian crania, in which it existed in one in 41.25, or among Europeans, among whom it is said by Dr. C. J. Blake to be found in about five out of a thousand.³³ There is also more or less difference in the shape of the outer opening of the ear, a fact to which my attention was called by my friend, Dr. H. P. Walcott, of Cambridge, to whom I am indebted for many valuable suggestions. In some, it is almost circular, whilst in others it is more or less elliptical in form. This may be due to natural causes,³⁴ though in some instances it is difficult to believe that the opening has not been somewhat narrowed by posterior pressure. Still this conclusion would not be warranted by the facts, as there are crania in this collection, very much flattened posteriorly, in which it does not exist, just as there are others, that are normal, in which it is found.

Three of these crania show evidences of a diseased condition. In one, a youth, No. 11,970, there are marks of severe inflammation, by which the apex of the occipital and the adjacent parts of both parietals, were much affected. A bony excrescence, or rather a series of them running into one another, and forming a united whole, covers all that portion of the head and completely effaces the lambdoidal and inter-parietal sutures, so far as the inflammation extends.

In No. 12,308, there is found in the upper part of the occiput and extending almost entirely across it, about 20^{mm} below the apex, a line, or belt, 16^{mm}. broad, of small holes, something like those in the top of a pepper box. These holes or indentations extend through the outer table and spongy portion of the bone of the skull, but do not penetrate through the inner table. The adjoin-

³³ Seventh Annual Report of the Peabody Museum, p. 15.

³⁴ The meatus auditorius externus, which is circular in young subjects, and somewhat oval in adults." Sharpey & Quain. *Anatomy*. Edited by Leidy. Vol. I, p. 157. Philadelphia, 1849.

ing part of the left parietal for a space measuring 42^{mm}. long by 24^{mm}. broad, is affected in the same manner.

In No. 14,004, complete ankylosis has taken place between the occipital condyles and the superior articular surfaces of the atlas bone.

Some of these crania possess anatomical features of special interest.

No. 12,297 was much broken at the time it was taken out of the grave and was not mended until within the past few days, too late to tabulate its measurements with those of the other crania from this region. It is the calvarium of an adult, probably a male, and measures 152^{mm}. in length, 152 in breadth, 144 in height. Width of frontal 92. Index of breadth 1,000. Wormian bones are found in the lambdoidal suture. The frontal suture is persistent and this is the only skull in the entire collection, in which it is. Along the line of this suture, from the glabella to the point of intersection with the coronal, there is an angular or roof-shaped arrangement of the two parts into which the frontal is divided, very similar to the formation that is frequently found at the junction of the parietals in the New England and some other groups of Indians. This skull is flattened posteriorly.

In No. 12797 there is an additional suture beginning at a point on the lambdoidal suture 46^{mm}. above the posterior inferior angle of the left parietal, and extending along the temporal ridge for 52^{mm}., throughout which distance it continues open. At this point it trends downwards, and though faint can still be traced for a farther distance forward of 50^{mm}., or to a point within 24^{mm}. of where the coronal bends forward to join the sphenoid, when it is obliterated. Just back of this point a short suture, 12^{mm}. long, unites it with the squamosal. The sphenoid suture is almost perfectly horizontal, extending forward from the upper anterior angle of the temporal bone, to where the transverse suture crosses the malar bone. By this arrangement of the sutures we have two extra bones intercalated between the parietal and temporal bones of the left side, extending along their entire length. At the junction of this extra suture with the lambdoidal, there is a well developed wormian bone, as there is also on the right side where a section of that parietal, in the shape of a trapezoid, is cut off by an extra suture, squamosal in character, which unites the upper posterior angle of the right temporal, with a point on the lamb-

doidal suture 20^{mm}. above its junction with the *additamentum suturæ squamosæ*. Attention is also called to the extraordinary capacity of this skull, which, after careful measurement, is found to amount to 1825^{cc}. This is 273 more than No. 13,323, which is nearest to it, and 741 larger than the smallest on the list. In other words the capacity of the smallest is less than 60 per cent. of this one. Some idea may be formed of its unusual size, when it is remembered that it is 275^{cc}.³⁵ larger than the average European, and that the largest healthy European skull on record, only exceeds it by 43^{cc}.³⁶ Large as this skull undoubtedly is, it does not stand alone. In the collection of Dr. Jones to which we have so often had occasion to refer,³⁷ there is one that measures 103 c. inches or 1688^{cc}.; the Army Medical Museum³⁸ has one from a mound in Illinois with a capacity of 1785, and Schoolcraft³⁹ speaks of "an untamed Shawnee brain that rises to 104 c. inches" or 1704^{cc}. It must not be forgotten, however, that this is an anatomical characteristic, and that unless "the quality of the brain can be represented at the same time as the quantity, brain measurement cannot be assumed as any indication of the intellectual position of races, any more than of individuals."⁴⁰ It may, indeed, be true, as recent researches seem to show,⁴¹ "that a superior race contains more of voluminous crania than an inferior," and that "the difference between the largest and smallest brains among modern Parisians is three times that observed in the negro;" but to infer the superiority of a race (whatever that may mean), from the presence of one or all of these characteristics in their crania, would involve certain other admissions that cannot be sustained by the facts. Judged by this standard, the moundbuilder of the Cumberland valley would rank very high in the scale of develop-

³⁵ Seventh Annual Report of the Peabody Museum, p. 10. "The largest crania measured, 1550 c. c. . . . is a little larger than that of the average European."

³⁶ Lyell. *Antiquity of Man*, p. 89. London, 1873.

³⁷ Exploration of the Aboriginal Remains of Tennessee, p. 110. Published by the Smithsonian Institution. Washington, 1876.

³⁸ Check list of Preparations and Objects in the section of Human Anatomy of the United States Army Medical Museum. Washington, 1876.

³⁹ Schoolcraft. *Indian Tribes of the United States*. Vol. II, p. 330.

⁴⁰ Fourth Annual Report of the Peabody Museum, p. 11.

⁴¹ Experimental researches on the variations of volume of the cranium, etc., by M. Le Bon, quoted in *Nature*, for July 18, 1878. "Among 100 modern Parisian heads, there are about eleven with a cranium of 1760 to 1900 cubic centimetres; in the same number of negro heads not one will be found of such size. The weight of 100 masculine Parisian brains of the present, varies between 1000 and 1700 grammes, the volume, between 1300 and 1900 cubic centimetres, etc., etc."

ment—far ahead of the ancient Peruvian, who was, confessedly, among the most civilized of the American aborigines, but whose skull in point of capacity, did not exceed that of the Australian or the Hottentot.⁴² This conclusion, however, legitimate though it be, is not borne out in the story of those nations, as revealed by the spade and pick-axe; but it will serve to show the uncertain nature of the ground that must be occupied by any one who engages in the vain effort to conjure up the vision of an extinct civilization, by a study of the crania of the people among whom it was developed.

⁴² Fourth Annual Report of the Peabody Museum, p. 11.

ON THE DISTRIBUTION AND TENURE OF LANDS, AND THE
CUSTOMS WITH RESPECT TO INHERITANCE, AMONG
THE ANCIENT MEXICANS.

BY AD. F. BANDELIER.

IN a previous paper we have endeavored to describe the warlike customs and organization of the Mexican tribe.¹ Our conclusions in regard to them are somewhat at variance with those generally adopted, since, instead of the military despotism which heretofore has been admitted as existing in ancient Mexico, we found but the military democracy peculiar to a warlike tribe.² It is our purpose now to investigate how far the Mexicans may have progressed in their notions about the tenure and distribution of the soil.

The picture which nearly all the authors, ancient as well as modern, trace of the condition of aboriginal Mexico is that of a feudal monarchy.³ This alone should fix permanently the mode of landed tenure. It implies also the notion of abstract ownership, and thus indicates a high state of culture. But we have already

¹ "On the Art of War and Mode of Warfare of the Ancient Mexicans," in 10th Annual Report of the Peabody Museum of American Archeology and Ethnology.

² "Art of War, etc., etc., of the Ancient Mexicans," pp. 113, 114, 115, to 127 inclusive, especially the notes. See also "Ancient Society," by Lewis H. Morgan. (N. York, 1877.) Part II, chapter VII, "The Aztec Confederacy," pp. 188-214 inclusive.

³ The first information tending to represent the condition of Mexico as a feudal state was probably furnished by Cortés; or through his expedition at least. The reports of the preceding voyage of Grijalva (1518) contain no positive statements. On the other hand the certificate issued by Cortés (probably about the 20 May, 1519, or 29 days after his landing at Ulna), to the chiefs of Axapusco and Tepeyahualco, already speaks of "the great Montezuma, which resides in this great city of Tenochtitlan and all its provinces." We have not Cortés' first letter to the emperor, but in his second report, 30 Oct., 1520, he mentions "a great Lord called Mutezuma." (Vedia, "Historiadores primitivos de Indias," Vol. I. Carta Segunda, pp. 12 and 13.) The same dispatch contains a number of details on Montezuma's power, from which a feudal empire was necessarily construed as for inst. (p. 33): "There are in this great city many very large and fine houses, the cause of it being that all the *Lords of the land, vassals of the said Mutezuma*, have their houses in that city . . ." "What has been ascertained is: that his sovereignty was almost as large as Spain . . ." (p. 34.) Gomara, who published his "Conquista de Méjico" in 1552, already mentions "thirty lords of one-hundred-thousand vassals each, and three-thousand lords of places." (Vedia I, p. 345. "Corte y guarda de Motezuma.") Oviedo ("Historia general y natural de Indias," Vol. III, Lib.

seen that the institutions of the Mexicans were democratic and not monarchical, that their chiefs and leaders filled elective, and in no case hereditary positions.⁴ This latter fact whose final discussion we reserve for another occasion, speaks strongly against the existence of privileged classes, based upon territory and landed property; therefore it also militates against feudalism itself.

Still we cannot permit ourselves to become prejudiced by such indications, against the views generally accepted. They merely warn us of the *difficulties of our task*. These difficulties are greater yet than those against which we contended in our first essay. The military life of the Mexicans has furnished the bulk of their history, and through it a number of facts, by which the former could be almost restored. The question of distribution of the soil, however, apparently relates to *customs* only; broken up and to a great extent obliterated centuries ago. Nevertheless, accessory facts, and especially a merely cursory review of the history of the Mexican tribe, may enable us yet to form an idea of these customs. The Mexican rules of inheritance are in direct connection with them also, and lastly, the *acts of the Spaniards* during the first times after the conquest, when they more or less suddenly overturned the ancient order of things, should bring to light many forgotten features of aboriginal tenure and distribution of the soil.

Having thus sketched the programme—so to say—of our work, we have yet to offer two explanations ere we proceed to enter upon the discussion proper, itself.

In the first place: by “accessory facts,” we refer to the *social organization* of the Mexicans in particular. It is inseparable from

XXXIII, cap. XLVI, p. 503) again speaks of “more than three-thousand lords his subjects, each one of many vassals, and each held his principal dwelling in Temistitan, residing there certain months each year.” The author, a friend of Columbus, and personally acquainted with all the eminent men of the conquest, resided at the West Indies and Nicaragua until 1550 (his stay though interrupted by at least six voyages to Spain and back), was one of the most cautious and best situated of the old chroniclers. But the chief originator of the feudal view is Fernando de Alva Ixtlilxochitl, a half breed of Tezcuco, and belonging to the kin of that tribe's chieftains. He wrote about the year 1600, and both of his works, the “*Relaciones historicas*,” and the “*Historia de los Chichimecos ó reyes antiguos de Tezcuco*,” present, it should not be denied, a picture of logical development of feudal institutions on Mexican soil. Torquemada of course concurs. We hope to be able to investigate, elsewhere, the claims of Ixtlilxochitl to the rank of a reliable source. Fairness, however, compels us here to mention the above authors, as the mainstays of current opinion.

⁴ “*Art of War*,” etc., pp. 96, 128 and 161.

landed tenure, and we therefore must recur to it frequently in the course of our allusions to the history of the tribe.

Secondly: we do not pretend to review the history of ancient Mexico as fully as it *should* be done, but only as far as it touches the subject of this paper. Many points therefore, which ought to be closely scrutinized, will be passed over lightly, or without any discussion.

One of the most learned authors of the 16th century, on American topics,—the Jesuit father Joseph de Acosta, says: "Learned men affirm and write that the relations and the memories of these Indians do not go further back than four-hundred years. . . ."⁵

Indeed, although much has been written about the aboriginal history of Mexico, it appears as if the 12th century was the *limit of definite tradition*.⁶ What lies beyond it is vague and uncertain, remnants of traditions being intermingled with legends and mythological fancies. Nothing positive can be gathered except that, even during the earliest times, Mexico was settled or overrun by sedentary, as well as by nomadic tribes,—that both acknowledged

⁵ "Historia natural y moral de las Indias," Lib. I, cap. XXV, p. 83. The passage relates directly to Peru, but is just as applicable to Mexico.

⁶ "We venture to assume this period as the one during which traditional history of Mexico really begins. Of course, those writers who have made the fabrication of a Mexican chronology a special object, go much further back. The late Abbé Brasseur de Bourbourg, for instance, quotes the "Codex Chimalpopoca," purported to bear date 22 May, 1558, and which begins as follows (History of the three suns). "This is the beginning of the histories of all kinds which happened a long time ago, how the earth was divided, and distributed to each one, its origin and foundation, how the sun began to give to each one his share, assigning the limits; there are now six times four-hundred years, and one-hundred more, and thirteen more . . ." The distinguished historian concludes therefrom, that 955 B. C. there occurred already, in Middle America, a division of lands according to a systematic register ("Popol-Vuh," Introduction, page CXI). Clavigero's Chronology begins 508 A. D. ("Storia del Messico," Lib. II, cap. I). Don Mariano Veytia ("Historia Antigua de Méjico," published by Sr. Ortega, 1836), after fixing the date of the establishment of "Huehuetlapallan," to the year 2237 of the earth's creation (Vol. I, cap. II, p. 23), or 1796 B. C. (p. 219) begins for the settlement of the Toltecs at Tollantzinco in 897 A. D. (Cap. XXII, p. 121, of 1st volume). Ixtlixochitl ("Histoire des Chichimèques ou des anciens rois de Tezcucó," translation by Mr. Ternaux Compans) says: (Cap. II p. 13) that the Toltecs founded Tollan 503 A. D. No reliance can be placed on these statements and dates. They are not any longer traditional, but mythical, and although we are far from disregarding the importance of legends or myths for historical investigations, we still cannot accept them as chronological bases. The oldest date in the history of Mexico which appears to be approximately certain is that of the settlement of the Mexicans in the marsh where they subsequently built the pueblo of Tenuchtitlan. It would about agree with A. D. 1325. Allowing two centuries more for the period during which the Mexicans and their kindred tribes reached the valley, we are carried to the twelfth century as the time from which distinct tradition has yet reached us. What lies beyond can occasionally be rendered of value for ethnological purposes, but it admits of no definite historical use.

a common origin, while the sedentary tribes were still further connected together by the bond of language,—and that the original home of these people lay to the north of Mexican territory. We further can infer, that even the sedentary tribes, among which the **TOLTECS** are most conspicuous, had nowhere advanced to the condition of a *nation* or *state*; *political society*, based upon territory and landed property, being unknown to them. Their institutions appear to have been *democratic*, their manner of living *communal*, thus excluding the idea of feudality altogether; even at those remote periods of Mexican history.⁷ The usual inter-tribal wars,

⁷ Our information in regard to the Toltecs is limited and obscure. The name itself appears to be a surname: "Toltecatl"—"oficial, de arte mecanica, o maestro" (Molina, Vocabulario, Parte II. p. 149). Torquemada (Lib. I, cap. XIV, p. 37) "I merely say, that Tulteca signifies a skilled worker . . ." Veytia (Vol. I, cap. XXI, pp. 203 and 206). Sahagun ("Historia general de las cosas de Nueva-España," edited by Don Carlos María de Bustamante, Vol. III, Lib. X, cap. XXIX, p. 106). "First the Tultecas, signifying excellent workmen . . ." (p. 107) "y no tenían otro nombre particular sino este que tomaron de la curiosidad, y primor de las obras que hacían, que se llamaron obras tultecas, ó sea como si digesemos, oficiales pulidos y curiosos . . ." Their proper name, as we shall hereafter see, was "Chichimecas,"—in common with all the aborigines of Mexico. Even such tribes as are reported to have preceded them, like the Xicalancas and Olmecas, are connected with reports indicating the same origin. Thus Motolinia ("Historia de los Indios de Nueva-España" in Sr. Icazbalceta's "Coleccion de Documentos," Vol. I), says: ("Epistola proemial," p. 7), that the Xicalancas and Mexicans descended from sons of the same father. Gomara ("Conquista de Méjico," Vedia I, p. 432), says the same, and also that "Tl'mecatli" was one of their brothers, and that from him the Olmecas descended. Sahagun, however (Lib. X, p. 147), contradicts, excluding the "Olmecas, Vistoti, and Nonooalca" from the general appellation of Chichimecas, but includes nearly all the other tribes of Mexico under a common origin. But Veytia seems to consider the Olmecas and Xicalancas as descending from the same stock as the Toltecs (Vol. I, cap. XIII, p. 150); though his statements might be more positive yet. The Toltec language was the "Nahuatl," a fact too frequently mentioned to need any further quotations. Through it their connection with the tribes of the valley of Mexico, with the Tlaxcallans, Huexotzincas, Cholullans,—and also the Niquirans of Nicaragua is established beyond a doubt. Their division of time and numeral system (as far as the language allows a judgment), was the same as that of the natives of Michhuacan, Oajaca, Chiapas, Yucatan, and Guatemala. If we add to these indications those derived from local myths and legends, we become inclined to believe the reports, that the aborigines of Yucatan and Guatemala for instance, are direct descendants of the Toltecs, or at least from their original stock. This fact acquires a certain importance, since it enables us, from the condition of these tribes at the time of their first contact with the Spaniards, and from their local traditions, to judge partly of the status of the Toltecs, and perhaps to reconstruct their condition and organization of society.

In order to attempt an investigation of the true condition of Toltec society, we have to consider three different points which are the following: Reports about the Toltecs, contained in Mexican sources; since only in Mexico they were called by that name. Reports about the condition of the Toltecs in Mexico *after* their reported dispersion. The condition and organization of such tribes, outside of direct Mexican influence, which still acknowledged an original connection with what has been called the Toltecs in Mexico.

If we follow the traditions current in the Mexican valley, as reported *first* by father

as well between sedentary Indians and roving tribes, as among the

Sahagun (hardly any of his predecessors mentioning the Toltecs,—a fact not devoid of importance!) it simply appears that the Toltecs were sedentary people, therefore agricultural and proportionately skilled in the use of metals and stones (Lib. X. cap. XXIX, Vol. 3). The same author, in his tale about the fortunes of Quetzalcohuatl, whom he acknowledged as distinctly connected with the fate of the Toltecs, says that (Lib. III, cap. V, p. 248, of Vol. I): the pueblo of Tollan had *two* chiefs,—that it was engaged in war with another tribe not far distant (Coatepec, cap. VI, p. 249),—thus showing at the same time: that the Toltecs were not subject to a ruler residing in Tula, as is commonly reported, but that Tula (or Tollan), was the settlement of a tribe, without authority over any others. There are other indications, in this very legend of Quetzalcohuatl, to show that the Toltecs of Tula were very independent from their chiefs (See cap. VI to XI). Further on, if we follow the peregrinations of Quetzalcohuatl after the same authority, it strikes us that this mythical personage travels through a singularly disjointed country. Everywhere he meets strange places (Cap. XII to XIV), not subject to the tribe from which he originally went out.

Toquemada ("Monarchia Indiana," Lib. I, cap. XIV, p. 37), is more detailed. He asserts that the Toltecs were originally led by seven chiefs, but that after their settlement at Tulantzinco they elected a "king," establishing as a rule that no one of these so-called monarchs should "rule" any longer than fifty-two years, and that if he died previously "the republic governed until the expiration of the time." In his relation of the history of Quetzalcohuatl (Lib. III, cap. VII, pp. 254, 255, and 256), whom he distinctly connects with Tula, the same fact is mentioned as in Sahagun, namely; that the inhabitants of the country were divided into independent tribes, such as Tula, Cholula, Quauhquechollan and others.

It is, however, Fernando de Alva Ixtlilxochitl, whose writings have furnished the chief material for the Toltec history. He gathered his facts from his kinsmen, and, he says, from ancient picture-writings which they explained to him ("Hist. des Chichimèques" Dedication to the vice-roy of Mexico p. XIII, and XIV). Also from songs. It is a slender basis for his otherwise very positive statements, since it may well be accepted that Toltec picture-writings did scarcely exist any more at his time, unless we except such as are analogous to the Dresden-Codex (Humboldt "Vues des Cordillères et monuments des peuples indigènes, etc." Plate XLV of the atlas in folio), regarding them as of Toltec origin. These, however, no Mexican native could have interpreted at that time.

Ixtlilxochitl also speaks of seven chiefs of the Toltecs ("Ils avaient sept chefs, et choisissaient alternativement un d'entreux pour les gouverner." Hist. des Chichimèques," Cap. II, p. 13; also "Segunda Relacion" in Vol. IX, p. 323, of Lord Kingsborough's "Antiquities of Mexico.") He equally mentions the 52 year period of the head-chief (Cap. II, p. 13), and in his "Tercera Relacion" (p. 325), but adds in the "Cuarta Relacion" (p. 326): "Este Mitl gobernó 59 años y quebró en la orden antigua de los Tultecas de gobernar 52 años."

But he also tells us in his Second "Relation" that at Tollantzinco "they constructed of planks a house large enough to accommodate the entire nation," and hints at a number of scattered settlements springing up, though he insists that these were all dependencies of a great Toltec "empire." Nevertheless, his description of the wars among the Toltecs ("quinta Relacion") is not in favor of the latter assumption.

It is mostly on such statements that Don Mariano Veytia has based the Toltec history which forms the beginning of the "Historia antigua de México."—But the eminent Mexican scholar (he wrote about the middle of the 18th century) has added some other details, which we dare not neglect here.

In common with all the others, Veytia places the origin of the Toltecs to the North, where he locates the great city of Huehuetlapallan. Of this great city he says: "The houses in which they dwell, as well in the city as in the other settlements were then (and for many centuries afterwards, although they had Kings and governments already) but natural caverns, which they also imitated. These were all their dwellings, they sub-

village-Indians themselves, were waged during these early periods.

sisted on fruits, herbs and the chase, and dressed in the skins of wild beasts" (Vol. I, cap. III, p. 25.)—From this place there went out bands or families (Cap. II, p. 24), "taking each one a different name, after that of the chief or father of the family leading them," and one of these bands were the Toltecs.

These were again composed of seven lineages (Cap. XXI, p. 207), and the government "resided in the seven principal chiefs" (Cap. XXII, p. 214). Describing the peregrinations of this tribe until they reached central Mexico, he again mentions the large house made at Tollantzinco "in which when completed, all the people found room" (Cap. XXII, p. 221), and finally (Cap. XXIV, p. 227), the formal change made by free common consent of all the Toltecs, of their heretofore democratic government into a despotic monarchy, with descent in the male line, but the term of office of each of these despots limited to fifty-two years (Cap. XXV). We also read of a number of pueblos co-existing with Tollan, but reputed subject to it, in direct opposition to Sahagun and Torquemada, and even sometimes to himself. Of course, there are abundant details about the arts and sciences attributed to the Toltecs, the magnificence of their buildings, etc., etc. To all these we shall refer on another occasion. In regard to weapons and military costume Veytia confirms what we have already said (Art of War, p. 126, and note No. 124), about the great analogy between the Mexicans proper and other tribes of older date (See cap. XXXIII, p. 289).

Veytia was the precursor and cotemporary of the Abbé Clavigero, but the latter's work, "*Storia antica del Messico*" was printed fifty-six years previous to the writings of the former. Clavigero's statements are, in a condensed form, but a repetition of those of Veytia, with whom he corresponded.

If we now attentively consider the above we shall readily see:

- (1). That the Toltecs were descended from at least semi-nomades.
- (2). They were organized in consanguine groups, governmentally sovereign, whose chiefs formed the council of the tribe.
- (3). They possessed a head war-chief, elected for life, since the limitation of the office for fifty-two years is in itself a concession, that the incumbent held it for life-time.
- (4). They practised communism in living.
- (5). Consequently, their organization and institution was democratic, not monarchical, and the picture of a feudal empire among them is erroneous.

It is generally admitted that in the 10th or 11th century of our era, the Toltecs of Mexico were dispersed; only a few settlements remaining. Of these the principal were removed to Texcoco "where they founded four quarters, since the Culhuas, as the Toltecs were then called, formed four families" (Ixtililxochitl, "*Hist. des Chichimèques*," cap. XIII, p. 87. Mr. Ternaux has translated "tribes" but the Spanish original has "familles.") This is a further evidence of what we have advanced, the four quarters being consanguine groups localized, or "gentes," as Mr. Morgan has established the term in "*Ancient Society*." Feudalism, however, is incompatible with gentile society.

Those of the Toltecs who emigrated are reported to have fled to the South where perhaps others of their language had preceded them. Among such as have been reported of the same origin, the Maya of Yucatan, and the Q'Quiché of Guatemala are most prominent. Sr. Orozco y Berra, in his excellent work "*Geografía de las Lenguas y Carta Etnográfica de México*," regards the Maya and Q'Quiché as sister-languages (Part I, cap. IV, p. 18). If the assumption is correct that they are of Toltec descent, the reports about the condition of these tribes at the time of the conquest, or in their undisturbed aboriginal condition, are of weight for this discussion.

Yucatan, at the time of its first discovery (1517), was inhabited by numerous sedentary tribes, not connected with each other (Bernal Díez del Castillo, "*Historia verdadera de la Conquista de Nueva España*," cap. XXIX, p. 24, in Vedia, Vol. II. Villagutierrez y Sotomayor "*Historia de la Conquista y Reduccion de los Itz'atx y Lacandones*,"

Sometimes the latter, then again the savages prevailed, until

Lib. I, cap. V, p. 28 and 29. Antonia de Herrera "Historia general de los hechos de los Castellanos en las Islas y la Tierra Firme del Mar Oceano," Dec. IV, Lib. X, cap. II, p. 205, and cap. III, p. 208), except through their common language. These tribes consisted of Lineages or consanguine groups. Herrera says (Dec. IV, Lib. X, Cap. IV, p. 211): "They are very proud of their ancestry, by which they all regarded themselves as relatives, assisting each other greatly. Their style of living was communal. Lorenzo de Bienvenida, in his letter to the Emperor, dated 10th February, 1548, Yucatan ("Recueil de pièces relatives à la Conquête du Mexique") states: "Your highness must know that it is very rare to find a house with but one inhabitant, all have two, three, four, six, and even more, among which the father of a family is chief (p. 331). When, in 1608, the last pueblo inhabited by Maya Indians,—Tayasá on Lake Peten, was captured by Don Martin Ursúa, it was found that the houses "were dirty within and unswept. All the inhabitants lived brutally together, an entire relationship together in one single house." (Hist. de la Conquista de los Itzaes, Lib. VIII, cap. XII, p. 494). We have already alluded to the fact the Itzaes had two chiefs. ("Art of War," p. 128, note No. 121. The information is taken from the work just mentioned, Lib. VIII). See further, on the Maya, L. H. Morgan's "Ancient Society" (Part II, chapter VI, p. 181). These indications do not, certainly, speak in favor of feudality among the natives of Yucatan.

The territory of Guatemala, when first visited by Pedro de Alvarado, in 1524, was also divided into a number of sedentary tribes, living in bitter enmity together. Of these tribes the Q'q'iché of Utlatlan or rather Gumarcnah, near where Santa Cruz del Quiché now stands, are best known. Their history has been written by Juarros ("Compendio de la Historia de Guatemala," 1808-1818), who especially bases upon the MSS. of the Captain Francisco Antonio Fuentes y Guzman, who wrote about 1680, a "Recordacion florida" now acknowledged to be full of exaggerations and misstatements. Juarros makes the Q'q'iché direct descendants of the Toltecs, and after their settlement in Guatemala under a certain King named "Nimaquiché," he gradually builds up there a mighty feudal Empire, which was in its splendor when the Spaniards overthrew it. The empire is already disproved by the first two letters of Alvarado (See Vol. I of Vedia's collection), by Herrera (Dec. III, Lib. V, Cap. X, p. 168), who also states (Dec. III, Lib. IV, cap. XVIII, p. 141), that the Q'q'iché had three chiefs "and that the election was made by the principals in the same way, as it has been told of Mexico," Torquemada (Lib. XII, Cap. VIII, p. 386), goes still further by asserting that the heads of families ("los que eran Cabeças de Familias ó Casas Solariegas") had the right to kill the "king" for misdemeanor. He also considers the Toltecs the first settlers:

But the document which conveys the most detailed information of the Q'q'iché is the "Popol-Vuh." This singular production, which we consult in its publication and translation by Mr. Brasseur de Bourbourg, appears to be, for the first chapters, an evident fabrication, or at least accommodation of Indian mythology to christian notions;—a pious fraud. But the bulk is an equally evident collection of original traditions of the Indians of Guatemala, and as such the most valuable work for the aboriginal history and ethnology of Central America. We cannot here enter into a bibliographical discussion. A few quotations from the third part of the Popol-Vuh will, however, be indispensable (Cap. III, p. 207). After having given the names of the four *mothers* of the Q'q'iché: "Balam Quitzé is the grandfather and father of the nine great houses of Cavek; Balam Agab is the ancestor and father of the nine great houses of Nimhah; Mahucutah the ancestor and father of the four great houses of Ahau Quiché. They existed in three divisions of families without forgetting the name of their grandfather and of their father, which extended and grew in the East." This is the beginning of a true genealogy, and it is carried through with great precision.

Then follows a long description of how each of these "families" received an Idol for itself, whereas "one was the name of their God, and they were divided afterwards" (Cap. IV, p. 217). Then they moved to "Tulan-Zuiva, at the seven caves, seven ravines." At that time they had yet but skins of animals to cover themselves with, but "at Zuiva

finally the Toltecs, who represented the sedentary class, were either exterminated or expelled; only a few scattered settlements remaining on Mexican territory.⁸ Their successors on the soil were tribes of utter savages hailing from the north also, and to whom the vague and indefinite appellation of Chichimecas is given. (If the word is Mexican, it might derive from "Chichiltic" red,

Tulan they forthwith acquired wisdom." This is a striking analogy indeed with the Mexican traditions above reported about the first times of the Toltecs. Settling at Izmachi, they occupied four quarters "they already covered four hills who together bore the names of their tribe" (Mr. Brasseur translates "tlnamit" sometimes by tribe and again by town. I prefer the former). At Izmachi they built houses of lime and stone (Cap. VII, p. 301). "But only three palaces were erected at Izmachi, the twenty-four palaces were not yet erected, but only three, one of those of Cavek, one single palace at the face of those of Nihñib, as likewise a single one, possession of those of Ahau Quiché." Recapitulating the festivals it is mentioned "For this reason the three branches assembled in the palaces named after them, where they drank their beverages, and ate their meals, price of their sisters and daughters, and with their hearts full of joy, they but ate and drank out of their painted cups within their palaces" (p. 305). This is a plain indication of communal meals, and of communal living. Finally it is related that at these places "they came to put names, there they took their titles, divided into families, organized into seven "chinamit" (kins not tribes), and classed themselves by quarters." Moving to Gumarcaah or Utlatlan, there they subdivided into twenty-four "great houses"—"the title of all their honors being distributed to each of the princes, there formed nine families with the nine princes of Cavek, nine with the princes of Nihñib, four with the princes of Ahau-Quiché, and two with the Lords of Zakik" (p. 309, cap. VIII).

It is easy to detect the following points:

- (1). The QQuiché were originally organized in three consanguine groups, to which latterly a fourth was added.
- (2). These kinships localized as four quarters, their mode of life was communal.
- (3). They subsequently divided into twenty-four kindred groups, constituting so many gentes.
- (4). The government of the tribe lay in the hands of the chiefs of these gentes.

This government, as the last chapter of the Popol-Vuh plainly states, was composed of twenty-four chiefs. Of these, three, one from each of three of the "quarters," had the title "Nim-Chocoh" or "great elected one." "There were consequently three Nim-Chocoh (great elected), acting as the fathers of all the chiefs of Quiché, they met together, commanded together, as the fathers and mothers of speech, and their condition is of the most exalted one." They commanded the forces of the tribe.

We have here consequently the organization of the QQuiché as a military democracy, based upon consanguine groups, with three elective war-chiefs at its head. The analogy of this organization with that of the Iroquois is really striking. It utterly discards all notions of feudality.

If now, as most of the older sources admit, the QQuiché really belonged to Toltec stock, we believe that the foregoing certainly sustains our views of the condition of these tribes, and justifies our statement that the Toltecs had "nowhere advanced to the condition of a nation or state" and that their institutions were democratic, their manner of living communal; monarchy and feudality being unknown to them.

⁸ Compare the legend of Quetzalcohuatl, as related by Sahagun (Lib. III, cap. III to XIV, Vol. I); by Torquemada (Lib. III, cap. VII), and contained also in the Popol-Vuh, where he is, of course, called Gukumatz (Part III, cap. VIII). See further Veytia (Cap. XXII, to the close of Vol. I).

and "mecayotl"—consanguine relationship, thus: "the kin of red men.")⁹ Enough is told us of the condition of these people to establish; that they were roving nomades for whom the soil had no other importance than for temporary occupancy as hunters,—that even the maize plant was unknown to them, and that they re-

⁹ The etymology of the word "Chichimecatl" which we have ventured to propose, is not sustained, to our knowledge, by any author. We give it for what it may be worth. Much has been said about its probable derivation. Durán ("Historia de las Yndias de Nueva-España é Islas de Tierra-firme," cap. II, p. 13), says: "Chichimeca, que quiere decir caçadores ú gente que viven de aquel oficio agreste y campesina . . . " thus showing that the word is Nahuatl, and its explanation to be sought for in Nahuatl terms. Ixtlilxochitl ("Relaciones historicas," 2nd part, "Historia de los Señores Chichimecas" — "Relacion primera.") says: "the Toltecs, Aculhuas, Mexicans, and all the other nations of this land pretend to be derived from the Chichimecan race, thus called after its king Chichimecatl who brought it to the New World" (p. 335 and 336). Torquemada (Lib. I, cap. XV, p. 39), affirms: "These people took the name of Chichimecas, because Chichimecatl signifies one who sucks; for Chichiliztli is the act of sucking . . . ; and since these people in the origin ate the raw flesh of beasts and drank their blood, sucking it, they called themselves Chichimecas or suckers." Acosta (Lib. VII, cap. II, p. 453), "they were a very barbarous people, living solely from the chase, and therefore they called them Chichimecas." Betancourt even derives the word from "chichinl"—bones of a dog. It is again Veytia who, with his clear and positive judgment has gone further than any of his predecessors. He has been the first (we think) to discover the term "mecatl" which signifies a cord (Cap. XII, p. 143), in the last two syllables of the word. It naturally led him to the allied term "mecayotl" which designated a consanguine relationship, and finally to the etymology of "kinship of Chichen" assuming Chichen to have been the name of their first chieftain. There is hardly any proof of the latter however, and still less that "Chichimecatl" was his personal name. On the other hand, all the authors agree in stating, that the locality inhabited originally by the Chichimecas was called "Huehuetlapallan"—the old red place—that one of the stations said to have been occupied by tribes on their migrations towards Mexico bears the name "Chichilicalli" or red house. Our suggestion is, therefore, not altogether improbable: that Chichimecatl may have derived from "chichilitic" a red object, and "mecayotl"—kin—therefore signifying "the kin of red men."

Señor Manuel Orozco y Berra, the distinguished author of the "Geografía de las Lenguas," makes it very likely that the Chichimecas which invaded Mexico after the dispersion of the Toltecs, or inhabited it jointly with them, spoke a different language (Part I, cap. I, p. 8), which has since disappeared. His opinion is sustained by that of another eminent Mexican scholar, Don Francisco Pimentel ("Cuadro descriptivo y comparativo de la lenguas indigenas de Mexico," Vol. I, p. 155). Nevertheless, the unity of origin of the Chichimecas, Toltecs and other tribes of "Nahuatl" stock, Mexicans of course included, is admitted, not only by Ixtlilxochitl, but already by Sahagun (Lib. X, cap. XXIX, p. 147), who resumes as follows: "All these families call themselves Chichimecas, and even pride and glorify themselves of such a name, and it is because like Chichimecas they went wandering over those lands aforesaid, and thence turned towards these parts, although really such lands were not called lands of Chichimecas, but Tlaotlalpan, Tlacohecalco, Micatlanpan, which means, wide and spacious plains, lying towards the north." Veytia, who almost incorporates the statements of all his predecessors, confirms it as follows: (Cap. II, p. 24). "Of this empire (of the Chichimecas) Huehuetlapallan was the famous court, and from it sallied at various periods bands and squads to people remote countries, each one taking its own name, after the chief or father of family which governed it, and becoming in course of time distinct nations with different languages or dialects, so that according to the belief of these nations and from their history, all the inhabitants of this new world have sprung

sorted to caves and thickets for shelter and residence. Landed tenure of any kind we cannot expect to find among them, and still less the system of feudality.¹⁰

Ethnographically, central Mexico must have presented an appearance, at those times, similar to that of the State of New Mexico and the territory of Arizona at present, in respect to their aboriginal population. Savage tribes swayed and roamed over the greater part of the country, while in the valley of Mexico proper, and east of it, some few "pueblos" of village Indians remained, barely protecting their crops and themselves from the inroads of marauding tribes.¹¹

from these seven families, and this city of Huehuetlapallan has the glory of having been the first settlement made in it since the flood, and of being the cradle of all its people, whose memory those of New Spain have preserved, calling it their ancient home."

(Compare, with this view of the peopling of Mexico, the beautiful exposé of Morgan, of the peopling of America from centres of subsistence as initial points of migration, in "Ancient Society" (Part II, cap. IV, p. 108). Mr. Morgan recognizes three such centres in N. America, the most prominent of which is the Valley of the Columbia.)

The title of "Chichimecatl," often extended to "Chichimecatl-tecuhtli," is found very frequently, not only among the Mexicans, but also the Tezcucans and Tlaxcallans. It was an appellation given in reward of personal merit in war.

¹⁰ Ixtlilxochitl has depicted to us a feudal Chichimecan Empire, more complete and typical than the feudal institutions of England. But at the same time he describes the Chichimecas as mere *savages* ("Histoire des Chichimèques," Cap. IV, p. 30). "He arrived in a place called Tenayucan Oztopolco, where there were many grottoes and caves, which formed the principal dwellings of that nation." Id. cap. IX, p. 65 and 66; Torquemada (Lib. I, cap. XV, p. 38 and 39), describes them as "people naked, without robes of cotton, of wool, or any other covering but the skins of beasts. Their appearance was wild, they were great warriors, whose weapons are bows and arrows." . . . "This nation of Chichimecas was governed and ruled by valiant and valorous captains" Ixtlilxochitl further states ("Hist. Chichimeca," cap. IX, p. 66): "Every family lived together, and such as had no caves which were their chief dwellings, built huts of straw. The game was divided among the family of the hunter but the hide belonged exclusively to him who had killed it." The soil, therefore, had no other value for them than as "hunting grounds." Nevertheless, both of the authors just quoted report a distribution of the land by their chiefs, in the shape of individual donations, and fiefes at an early date. But Ixtlilxochitl (Cap. IX, p. 63 and 64) asserts that the culture of the soil, even the maize plant, was unknown to them until the twelfth century of our era. Torquemada is still more explicit (Lib. I, cap. XLII, p. 67): "Neither did the Chichimecas pay any attention to it (agriculture or horticulture) for the reason that the Lords and Kings had parks ("Boques") of rabbits and deer, which supplied them with meat, and the common people and Maceuales went after it through the fields, thus sustaining themselves without any other kind of work, and without the toil of sowing or planting, to which they had not been accustomed." More than a century elapsed, according to the above sources, ere horticulture, and therefore sedentary living, began to appear among them. How could feudal tenure of the ground exist meanwhile? We need not refer here to other authors, neither to the descriptions furnished of the condition of the Chichimecas north of the Mexican valley, at the time of the conquest (Motolinia, Trat. III, cap. VII, p. 185). "Turvión Señores en esta tierra, como ahora son y estan los Españoles, porque se en señorearon de la tierra, no de la manera que los Españoles."

¹¹ See "Zwoelf Sprachen aus dem Südwesten Nordamerikas," by Albert S. Gatschet

While thus the high Mexican tableland especially was in a condition but little different from that of a fertile waste, migrations were in progress from that same undefined "north," which gradually carried thither tribes, or at least *kindred groups detached* from tribes, of horticultural sedentary Indians.¹² These bodies moved slowly, and independently from each other, and they settled down at last in the beautiful valley, near the watersheds in its centre. There they occupied *independent territories which they held as their own*,¹³ and while they, in all probability, did not always maintain friendly relations towards each other, it is still not improbable that, owing to the bond of common stock-language, they

Weimar, 1877 (a valuable contribution to Linguistics and Ethnography). Also "Lieut. G. M. Wheeler's Zweite Expedition nach Neu Mexiko und Colorado, 1876," by Oscar Loew (in Vol. 23 of Dr. Petermann's "Geographische Mittheilungen," p. 209). "The Spanish Conquest of New Mexico," by W. W. H. Davis, 1889. The sedentary Indians occupying the most limited expanse, and being also inferior in numbers to the roving bands among and around them.

¹² These facts are generally acknowledged, as well as that they migrated from the North. In addition to the authors already named in the course of this and of our previous paper, we shall merely quote: Gregorio Garcia: "El Origen de los Indios del Nuevo Mundo é Indias Occidentales" Madrid, 1729 (2nd Edition, Original appeared in print about 1606). "New Mexico whence came the seven lineages, which peopled New Spain" (Lib. III, cap. I, p. 81), (Lib. X, cap. III, p. 321). "Historia de la Conquista de la Provincia de la Nueva Galicia," written by the Licentiate Don Matias de la Mota Padilla, in 1742, and published by the Geogr. and Stat. Soc'y of Mexico in 1870 (Cap. I, p. 21). They were the seven tribes of "Nahuatl" stock, the community of language alone being sufficient to demonstrate their common origin.

¹³ All the older authors agree in stating that the different tribes settled independent of each other. See Motolinia ("Hist. de los Indios de Nueva España," in Col: de Docum: Vol. I. "Epistola proemial") Sahagun (Lib. X, cap. XXIX, p. 145). "Sucesivamente se volvieron los Nahoas, que son los Tepanecas, los Acolhoagues, los Chalcas los Vextzincas, y los Tlaxcaltecas, cada familia por si, y vinieron à estas partes de México . . . y así venidos todos à estas partes y tomada la posesion de las tierras, y puestas las mohoneras entre cada familia." Durán ("Hist: de las Yndias" (Cap. II, p. 10). "He of Xuchimilca after having gone around the entire lagune, was pleased with the site which they now occupy, settled there and took what he needed, without damage to anybody nor any contradiction" (p. 11). The Chalcas settled near the Xuchimilcas "quietly and peaceably." The Tecpauecas did the same, also the Tezcucans and the remainder (pp. 12, 13, and 14). Acosta (Lib. VII, cap. III, p. 436). "At the time these nations settled, the Chichimecas made no show of opposition, nor resistance, only they became estranged and like unto astonished retired into the rocky fastnesses." (It is not devoid of interest to connect herewith the proper assertions of Cortés about the utterances of Montezuma, "Carta Segunda," p. 25, in Vol. I of Vedia.) Gomara ("Conquista de México," p. 432, etc., Vedia, Vol. I). Fray Geronimo Mendieta ("Hist. ecclesiastica Indiana," Lib. II, cap. XXXIV, etc.) Ixtlilxochitl and Torquemada however, have made the opinion current, that all these tribes settled upon Chichimecan domain, and were assigned to special territories by the original holder of the entire country. But we have already established the nature of Chichimecan occupation of the land, and from it we cannot infer that any title was held, neither that any could be given to new comers.

sometimes associated (or even perhaps *considered*) against surrounding tribes.¹⁴

These settlers, who all spoke closely related dialects of the same language as their predecessors the Toltecs, namely: the "Nahuatl" or *good sound*, were: the *Aculhuans* or *Tezcucans*, the *Tecpanecas*, the *Xochimilcas*, and the *Chalcas*. The first settled on the Eastern shore of the central lagoon, the second to the west of it, while the two last-named tribes clustered around the fresh-water basins of the southeast. In this manner the valley was eventually mastered again by sedentary Indians, who held at bay the surrounding savages;—also defending it from neighbors of their own stock who, occupying at the same time contiguous areas placed under different geographical conditions, while their organization and plan of life were similar, and the language but dialectically varied;—still, eventually, became their most inveterate enemies.¹⁵

Although quite a respectable literature has arisen on the subject of the organization, customs and manners of these "Nahuatl" tribes of the valley of Mexico, this literature is much richer in facts purporting to be *historical* than in satisfactory *details on that subject itself*. We can but discern among the confusions and contradictions (of older authors particularly)—that the different tribes were democratic societies, based upon consanguine groups as units. Chiefs, *elected by the people*, formed their governments, whose highest authorities were the *councils*. The Tezcucans and Tecpanecas seem to have had each *one*, the Chalcas *two*, *head war-chiefs*, elected for life. In regard to their mode of holding and distributing the soil the most varied statements are given, most of these, however, based upon the assumption of monarchical institutions, and even of a great feudal empire with Tezcuco as its capital. Both of

¹⁴ The reports about a preponderance of certain tribes, such as the Tezcucans or the Tecpanecas, resolve themselves into a result of intertribal relations in the valley of Mexico. We need but consult the writings of Ixtlilxochitl for that purpose. (See "Hist. des Chichimeques" cap. XI, XII, XIV, and XVI). Torquemada (Lib. I, cap. XXXVII, p. 62).

¹⁵ For a history of the different tribes composing the specifically latest immigration of "Nahuatl" stock, we refer to all the older authors on Mexican topics. Those of their kindred who settled outside of the valley were especially the Tlaxcallans. The relations of the latter to the valley-tribes were always rather unfriendly. See Torquemada (Lib. III, cap. IX, p. 258, and 259. Cap. XI, p. 264, and 265). Durán (Cap. II, p. 13). But the continuous wars between Tlaxcallan and the tribes of the valley commenced when the latter began to extend their sway under the leadership of the Mexicans (Ixtlilxochitl "Hist. des Chichimeques" cap. XLI, p. 202). It is corroborated by the statements of the Tlaxcaltecas themselves to Cortés ("Carta Segunda," p. 18, Vedia, Vol. I).

these assumptions are disproved by the facts, related even by such authors as have most contributed towards fixing them upon the public mind as recognized truths.¹⁶ We need hardly say here,

¹⁶In regard to the Tecpanecas, Acosta says (Lib. VII, cap. II, p. 477): "From this it may be inferred, that among them the King exercised no absolute command and rule, and that he was rather a consul, or Dux, than a king." He further compares the Tecpanecas with the "reges" of ancient Rome (See Morgan's "Ancient Society," Part II, cap. XI, p. 297). The council was supreme among the Tecpanecas. See Tezozomoc ("Crónica Mexicana," Lord Kingsborough, Vol. IX, cap. IV, p. 11; also cap. V, p. 12, cap. VI, p. 13, "a esto respondió el rey y senado Tecpaneca: Digéronle: mira atempanecatli (que muy bien le conocian) bien conozco la humillacion y sugecion de los Mexicanos; ya es por demas, porque estan alborotados, y corajudos los Tecpanecas:") Durán (Cap. VIII, p. 64, and 65).

The Xuchimilcas were governed by two chiefs (Tezozomoc, cap. XVI, p. 25. Durán, cap. XII, p. 104. "Their chiefs, of which there were two, one of the chief-place ("cabeecera" rather lineage) of Xuchimilco called Yacaxapotecutli, and the other from the milpa (this is to be interpreted as descendancy), which is called Pachimalcattecutli, and together with them meeting many principals, said"): a joint meal after communal style is also attributed to them by Tezozomoc (Cap. XVI, p. 26).

The Chalcas also had two chiefs: (Durán, cap. XVI, p. 134, Montezuma Ilhuicamina said to Tlacaelel: "I wish, if thou agreeest, to send messengers to Chalco to the chief of Chalco Quateotli and to his companion Toteocitecutli . . ."—Tezozomoc, cap. XXII, p. 33. Cap. XXIV, p. 36. Confirmed by the action of Cortés after the voluntary surrender of Chalco, when he installed two chiefs. Bernal Díez: cap. CXXXIX, p. 154 and 155. Vedia, II).

With the Tezucucans or Aculhuas there appears always but one head-chief, but it is equally positive that the office, while remaining in a certain kin, was elective still. The fact is interesting and requires close proof. We adduce here, in a general way, Saha-gun (Lib. VIII, cap. XXX. "De la Manera que tuvieron en elegir los señores," p. 318, of 2d Vol.): Durán (Cap. LXIV, p. 496). "Montezuma sent his messengers to Tezucuco, and had all the chiefs of that city and kingdom called to learn from them whom they were inclined to elect . . ." (p. 497), "the which came, electing for King to Quetzalacxoyatzin, Negaualpilli's son . . ." Tezozomoc (Cap. CI and CII). Ixtlixochitl concurs ("Histoire des Chichimèques," cap. LXXXVI). Torquemada (Lib. XI, cap. XXVII, pp. 357, 358 and 359), acknowledges that, while the choice was among the *sons* exclusively, there still was a *choice* left, but he contradicts the statements of Juan Bautista Pomar (who wrote about 1582) who says, that this choice extended to the entire *kin* of the deceased head chief. Mendieta (Lib. II, cap. XXXVII, p. 153). "Although the Indians of this New Spain inherited the chieftaincy in direct lines, they took great care in ascertaining which one of his sons had to succeed to him." He mentions the succession in the cases of Netzahualcoyotl and of Netzahualpilli, each of whom were respectively followed by what he calls an illegitimate offspring, but whose mother was a *Mexican* woman. Veytia (Cap. XIV, p. 367). "The council hardly had been informed of the King's death, when it thought proper to elect a successor, after the manner of the Mexicans . . ." Carlos Maria de Bustamante ("Tezcoco en los Últimos Tiempos de sus antiguos Reyes," Mexico, 1826. Part III, cap. IV, pp. 218, 219 and 220). Alonzo de Zurita ("Rapport sur les différentes classes de chefs de la Nouvelle-Espagne" translation by Mr. Ternaux-Compans, p. 12). "The order of succession varied according to the provinces. the same custom, with slight differences, prevailing in Mexico, Tezcoco and Tacuba."

The assumption of a feudal empire at Tezcoco has already been discussed. It was an invention of chroniclers, who had a direct interest, or thought to have one, in advancing the claims of the Tezucucan tribe to an original supremacy. Tribal jealousy and rivalry, such a powerful ally of the Spaniards during the conquest, continued to subsist where the Spanish domination was fully established.

that all the tribes of Mexico, issuing from a common stock, speaking the "Nahuatl" tongue, and living under the same geographical influences,¹⁷ had reached an almost identical state of culture. Therefore the result of our investigations of the landed tenure among the Mexican tribe proper, can safely be assumed as applicable to all the other sedentary tribes of (the valley of) Mexico.¹⁸

While thus horticultural tribes had secured the fertile portions of that valley, dividing its expanse among themselves, and separated by unoccupied "neutral" soil,¹⁹—a small band of their own linguistical relationship was moving down from the North, and ultimately made its appearance in their midst. Those were the *Mexicans* proper, also called "*Aztecas Mexitlin*," "*Aztlantlacas*" or "*Mexica*."²⁰ This band was composed of Seven Kinships "lineages," whose chiefs jointly composed the government of the whole, a head war-chief, elected for life, directed their movements, but

¹⁷ The difference between the valley tribes and those of the Tlaxcaltecan mountain country, is not even very great. It is in fact but apparent. From the nature of the soil, the kinships of Tlaxcallan were more scattered in location, and therefore were apparently democratic. The same was the case among the Niquirans of Nicaragua. See Oviedo (Lib. XLII, cap. I, p. 1. 37 and 38), and E. G. Squier. ("Nicaragua," Vol. II. "Aborigines of Nicaragua," cap. II, p. 340-348).

¹⁸ Otherwise the confederacy, on equal terms, existing between the valley-tribes for more than a century previous to the conquest, and of which we shall hereafter treat, could not have been formed, neither could it have subsisted. The fact, however, that all the old chroniclers mention the tribes of Mexico under one common head, and describe their customs, as, in the main, identical,—proves that we can safely assume the Mexicans as typical in that respect. Some tribes were more advanced in certain mechanical arts than others,—but the difference was merely one of details, and not of organic principles.

¹⁹ See "Art of War," p. 135. The boundary line mentioned by Ixtlilxochitl (Histoire des Chichimèques," cap. XXXIII, p. 125), and also by Veytia (Cap. III of Book III, p. 167 of 3rd volume) if, as the latter asserts, it ever really existed, did not divide so much the territory of the tribes, but rather the range over which each one might freely extend, after the formation of the confederacy. Sr. Veytia contends that the remnants of it were still visible at his time, and carried the name "albarrada de los indios."

²⁰ "Art of War," p. 96, note 1. We have alluded to the common appellation of "Chichimecas." Sahagun (Lib. X^o, cap. XXIX, p. 147), says: "properly they call themselves Atlacchichimeca, or fishermen that have come from distant lands." This would be a corroboration, to some extent, of Torquemada's assertion (Lib. II, cap. XI, pp. 92 and 93) that the Mexicans introduced the art of fishing in the Mexican valley. We cannot help being struck by the prefixum, "Atlaca." If it decomposes into "Atl," water, and "tlacatl," man, it assigns to the Mexicans an original abode in the neighborhood of the sea, or of very large water-courses. Tezozomoc, in his first chapter, speaking of Aztlan, whence the Mexicans are said to have emigrated, and from which word the name of "Aztecs" is derived, says: "They had in this land and the lagunes thereof . . ." (p. 5). Aztlan itself means "place of the heron," which is an aquatic bird. (See also Veytia, Lib. II, cap. XII, p. 91). He places "Aztlan" towards the extreme north.

this office may not have, at that time, been permanently established;²¹—only temporarily, for emergency's sake.²² It is barely possible for us to follow the migrations of the Mexicans with any degree of certainty; we can but gather from the various and varied reports and traditions, that being horticultural Indians, fertile lands were sought for by them, and only when they reached the lake-basin did they begin to hope for realization of their desires.²³—There was yet much unoccupied space around the lagunes, still the newcomers were hardly welcome to the other occupants, who harassed them so long, that at last they fled into the marsh or swamp which then covered the area subsequently converted into the western lagoon of Mexico.²⁴ Thus they retired to ground *which was neither held nor claimed by any of the surrounding tribes*, and on the few solid patches protruding above the morass, they settled, glad to have escaped pursuit and found a resting place on

²¹ We have adopted the number seven for these kinships, although the interpreter of the Mendoza Codex (Tab. I, of Vol. I, Lord King's borough) says there were ten. "El exercito Mexicano tubo por caudillos diez personas nombradas . . ." (Vol. V, p. 40). Durán and Tezozomoc both say seven, so does Veytia. The two former authors even give the names of the idols which each of these seven clusters worshipped, carrying it along on their migrations. It is needless here to prove in detail the democratic nature of these even "lineages." Veytia, for instance (Lib. II, cap. XII and XIII), quotes Chimalpain as authority, and although he assigns to the Mexicans a leader ("caudillo") called Huitziton, he still implies that at Chapultepec only "they, emulating the other nations there located, resolved upon electing a King to govern them" (p. 109). Durán (Cap. III, p. 27). Clavigero mentions an "Aristocratic" organization of the Mexicans until the year 1352. "The entire nation was below a senate or conclave of the most respected persons, distinguished through nobility and knowledge. At the foundation of Mexico there were 20 of these" (Lib. III, cap. I). This is a new version. See also Gregorio García ("Origen de los Indios" Lib. V, cap. III). If we eliminate the mythical Huitziton, we find *occasional* head war-chiefs. Veytia even assures us that after Mexico was founded, they elected "one to govern them, although not in the capacity of a King, but as a leader or captain" (Lib. II, cap. XVIII, p. 159).

²² The *regular* series of Mexican head war-chiefs ("tlaca-tecuhtli") commences about the middle of the 14th century. Previous to it, the office appears to have been filled by occasional braves, as emergency required. Compare Veytia (Lib. II, cap. XII and XIII, with cap. XV, p. 131, and cap. XVIII, p. 159, and cap. XXI, p. 186 and 187). Torquemada (Lib. I, cap. III, p. 83. Cap. IV, p. 84. Cap. XII, p. 95). Mendieta (Lib. II, cap. XXXV, p. 148), and Acosta (Lib. VII, cap. 8, p. 468 and 469), etc., etc.

²³ Motolinia (Trat. III, cap. VII, p. 181). Durán (Cap. III). Tezozomoc (Cap. I, II and III). Acosta (Lib. VII, cap. 4, p. 459). García ("Origen, etc." Lib. III, cap. III, § V, p. 99 and 100. "que los haria Príncipes, i Señores de todas las Provincias, que havian poblado las otras seis naciones, que antes en ellos havian salido.")

²⁴ "Art of War, etc.," p. 87, note 5. Idem. p. 150, and note 194, 185, and p. 151, notes 187 and 198.—L. H. Morgan ("Ancient Society," Part II, cap. VII, p. 190 and 191). Among the older authors, Mendieta is very explicit (Lib. II, cap. XXXV, p. 148). "Y eso asiento les cuadró mucho por hallarlo abundante de cazas de aves y pescados y marisco con que se poder sustentar y aprovechar en sus granjerías entre los pueblos comarcanos, y por el reparo de las aguas con que no les pudiesen empecer sus vecinos."

soil *which they might hold as their own*.²⁵ It would appear that, through loss of numbers in the course of their migrations, as well as through divisions among themselves, the original consanguine groups composing the body, had been reduced to *five*.²⁶ Now a further and last division took place, one of these kindred clusters seceding from the rest, and establishing itself apart on another sandy expanse where, close to the others however, it grew to become the tribe of Mexico-Tlatilulco.²⁷ It remained independent until about forty years before the conquest.²⁸—The other *four* settled *each one by itself*, but still acknowledging a *common government*, in token of which the tribal place of worship was erected at the spot where these four areas met. Thus the “pueblo” of Mexico-Tenuchtitlan was founded; the seat and home of the Mexicans proper.²⁹

²⁵ Ixtlilxochitl (“Histoire des Chichimèques,” cap. X, p. 72), says that the Mexicans “asked the King of Azcaputzalco for soil” (to settle upon). Torquemada represents their settlement as a flight to a safe place (Lib. II, cap. XI, p. 92). Also Mendieta (Lib. II, cap. XXXV, pp. 147 and 148). Durán (Cap. V, p. 41), has the remarkable passage following: “que aun el suelo no era suyo, pues era sitio y término de los de Azcaputzalco y de los de Tezucuo; porque allí llegaban los términos del uno y del otro pueblo, y por la otra parte del Mediodía, términos de Culhuacan:” (This shows they were on neutral ground, dividing the tribes of their surroundings.) Tezozomoc confirms (Cap. III, p. 9), “estando en términos de los de Atzacapuzalco, Aculhuagues Tezcucanos y los de Culhuacan.” Durán (2° p. 41) further says that they contended to be masters of their soil, without owing allegiance or obedience to any one. See also Tezozomoc (Cap. III) and Motolinia (“Epistola proemial,” p. 5). Gomara (“Conquista,” p. 431. Vedia, 1st volume).

²⁶ We have already alluded to the number of chiefs leading the Mexicans at the time of their settlement in the lagoon. It varies from four to twenty. But the fact that four “quarters” composed it originally, leads me to the belief that four Mexican kinships remained, one seceding as the tribe of Tlatilulco. This division into four is the only fact reliably ascertained. (See notes 27, 29, 30 and 31).

²⁷ This fact is too amply proven to need special references. How it occurred we cannot ascertain, since it is related in the most varied manner by the different sources of authority. If the statement is correct that even during their migrations, the Mexicans proper and the Tlatilulcás kept apart, as tribal components, or probably “phratries,”—then the fact of their localizing as tribes independent from each other is easily accounted for. See Veytia (Lib. II, cap. XV, p. 135).

²⁸ The date of its conquest by the Mexicans is about 1473 (“Art of War, etc.” p. 102). It can easily be verified from the date on the so-called “calendar stone” at the city of Mexico. (See “Calendario Azteca” by Señor Chavero.)

²⁹ The question remains yet undecided as to whether these four “quarters” (“barrios”) were four original kinships, or whether they were already four “brotherhoods of kinships” (phratries), analogous to the Roman curiæ formed by (or rather remaining as the last vestige of) original kinships disaggregated. The latter might appear likely from the fact of the greater number of chiefs (than four), mentioned by the old authors. The existence of still lesser groups is plainly acknowledged at the same time. Durán says (Cap. V, p. 42): “On the night after the Mexicans finished the place of worship (‘hermita donde su dios estaba’), a large area of the lagoon being filled up and room made for the houses, Vitzilpochtli spoke to his priest or keeper and said to him:

Four "quarters" had been formed by the localizing of four relationships composing them respectively, and it is expressly stated that each one "might build in its quarter (barrio) as it liked."³⁰ The term for these relationships, in the Nahuatl tongue, and used among all the tribes speaking it was: "Calpulli." It is also used to designate a great hall or house, and we may therefore infer that, originally at least, all the members of one kinship *dwelt under one common roof*.³¹ The ground thus occupied by the "Calpulli" was

"Say to the congregation Mexican that the chiefs, each one with his relatives, friends and connections, shall divide themselves into four principal quarters, my house being in the centre among them, and that each cluster may build in its quarter as it pleases." These quarters are those which now remain in Mexico, that is, the quarters of San Pablo, of San Juan, of Santa Maria la Redonda, and of San Sebastian. After the Mexicans had divided into these four places, their God commanded them to distribute among themselves the idols ("los dioses"), and that each quarter should name and designate particular quarters where these particular idols should be worshipped. Thus each quarter was divided into many small ones, according to the number of the idols called Calpultona (it should be "Calpultecoltzin" composed of Calpulli-quarter, and teotl-god), which signifies god of the quarter." (See Acosta, Lib. VII, cap. VII, p. 467.) Tezozomoc, cap. III, p. 9, "y siendo de noche hicieron junta y les dijo el sacerdote Quauhtloquetzqui: hermanos, ya es tiempo que os dividais un trecho unos de otros en cuatro partes cercando en medio el templo de Huitzilopochtli, y nombrad los barrios cada una parte, y asi concertados para dividirse . . ." Torquemada confirms these statements (Lib. III, cap. XXIV, p. 295), although he protests against the origin of this division. He says: "I confess it to be truth that this city of Mexico is divided into four principal quarters, each one of which contains other smaller ones included, and all, in common as well as in particular, have their commanders and leaders . . ." He further says (Lib. XIV, cap. VII, p. 345). "These clusters ("parcialidades" kinships) were distributed by calpules, which are quarters ("barrios"), and it happened that one of these clusters held three, four, or more calpules, according to the number of its people . . ." (We shall investigate hereafter the objection of Torquemada). The same author, however, acknowledges (Lib. III, cap. XXII, p. 288), that the founders of Mexico were "nine families . . . These families commenced the foundation of this illustrious and magnificent city . . ." One fact results beyond all doubt, that the first settlement of Mexico was made upon the basis of a division into kinships or consanguine groups, localizing on certain areas, which jointly composed the tribe. That the government was democratic has already been established previously.

³⁰ Durán (Cap. V, p. 42). Acosta (Lib. VII, cap. VII, p. 467). Herrera (Dec. III, Lib. II, cap. XI, p. 61).

³¹ Torquemada (Lib. II, cap. LXVIII, p. 194. "Estaba de ordinario, recogido en una grande Sala (ó calpul).") (Lib. III, cap. XXVII, p. 303. Lib. IV, cap. XIX, p. 396, (que así llaman las Salas grandes de Comunidad, ú de Cabildo). We find, under the corrupted name of "Galpon," the "calpulli" in Nicaragua among the Niquiraus, which speak a dialect of the Mexican (Nahuatl) language. See E. G. Squier ("Nicaragua," Vol. II, p. 342. "The council houses were called grepons, surrounded by broad corridors called galpons, beneath which the arms were kept, protected by a guard of young men"). Mr. Squier evidently bases upon Oviedo ("Hist. general," Lib. XLII, cap. III, p. 52. "Esta casa de cabildo llaman galpon . . .") It is another evidence in favor of our statements, that the kinship formed the original unit of the tribe, and at the same time a hint that, as in New Mexico, originally an entire kin inhabited a single large house. See Molina's Vocab. (p. 11).

NOT, as Torquemada admits, *assigned to it by a higher power*,³² *the tribal government itself held NO DOMAIN* which it might apportion among subdivisions or to individuals, either gratuitously or on condition of certain prestations; or barter against a consideration.³³ The tribal territory was distributed, at the time of its occupancy, *into possessory rights held by the KINDRED GROUPS AS SUCH*, by common and tacit consent, as resulting *naturally* from their *organization and state of culture*.³⁴

The patches of solid ground, on which these "quarters" settled, were gradually built over with dwellings, first made out of canes and reeds, and latterly, as their means increased, of turf, "adobe" and light stone. These houses were of *large size*, since it is stated that even at the time of the conquest "there were seldom less than two, four, and six dwellers in one house, thus there were infinite people (in the pueblo) since as there was no other way of providing for them, many aggregated together as they might please." *Communal living*, as the idea of the "calpulli" implies, seems, therefore, to have prevailed among the Mexicans *as late as the period of their greatest power*.³⁵

³² Torquemada (Lib. II, cap. VIII, p. 88, and Lib. III, cap. XXIV, p. 296) attributes the division into "quarters" to a "decree" of the Chichimecan "emperor" Techotlalatzin. But his assertions are disproved in part by his own statements, in part by the positive reports of other authors. Admitting even that the said Techotlalatzin should have wielded the discretionary power attributed to him, although there is strong evidence against it, he would have ruled *after* the foundation of Mexico. (Clavigero, Lib. II, cap. IX. Veytia, Lib. II, cap. XX, p. 178.) Consequently *after* the settling and localizing of the four quarters mentioned had taken place.

³³ The division into "quarters" is everywhere represented as resulting from common consent. But nowhere is it stated that the *tribal government or authority* assigned locations to any of its fractions. This is only attributed to the chiefs, on the supposition that they, although *elective*, were still hereditary monarchs.

³⁴ There is no evidence of any tribute or prestation due by the quarters to the tribe. The custom always remained, that the "calpulli" was sovereign within its limits. See Alonzo de Zurita ("Rapport sur les différentes classes de chefs de la Nouvelle-Espagne" pp. 51-65). Besides, Ixtlilxochitl says: ("Hist. des Chichim." cap. XXXV, p. 242), "Other fields were called Calpolalli or Altepetlalli." Now calpulalli (from "calpulli," quarter or kinship, and "tlalli," soil), means soil of the kin, and altepetlalli ("altepetl," tribe), soil of the tribe. Clavigero even says that the lands called "altepetlalli," belonging to the communities "of the towns and villages, were divided into so many parts, as there were quarters in the town, each quarter *having its own, without the least connection with the other*." (Lib. VII, cap. XIV.) This indicates plainly that the kinships *held the soil*, whereas the tribe occupied the territorial expanse. The *domain*, either as pertaining to a "Lord," or to a "State," was unknown among the Indians in general. Even among the Peruvians, who were more advanced than the Mexicans in that respect, there was no domain of the tribe.

³⁵ See Torquemada (Lib. II, cap. XI, and Lib. III, cap. XXII). Durán (cap. V). The quotation is from Herrera (Dec. II, Lib. VII, cap. XIII, p. 190), and is confirmed by Torquemada (Lib. III, cap. XXIII, p. 291), and especially by Gomara ("Conquista de

The soil built over by each "calpulli" probably remained for some time the only *solid* expanse held by the Mexicans. Gradually, however, the necessity was felt for an increase of this soil. Remaining unmolested "in the midst of canes and reeds," their numbers had augmented, and for residence as well as for food, a greater area was needed. Fishing and hunting no longer satisfied a people whose original propensities were horticultural; they aspired to cultivate the soil as they had once been accustomed to, and after the manner of the kindred tribes surrounding them. For this purpose they began throwing up *little artificial garden-beds*, "chinampas,"³⁶ on which they planted Indian corn and perhaps some other vegetables. Such plots are still found, as "floating gardens," in the vicinity of the present city of Mexico, and they are described, as follows, by a traveller of this century:

"They are artificial gardens, about fifty or sixty yards long, and not more than four or five wide. They are separated by ditches of three or four yards, and are made by taking the soil from the

Méjico," p. 443. Vedia, I). "Many married people ("muchos casados") live in one house, either on account of the brothers and relations being together, as they do not divide their grounds ("heredades"), or on account of the limited space of the pueblos; although the pueblos are large, and even the houses." Peter Martyr of Angleria ("De Novo Orbe," translated by Richard Eden and Michael Lok, London, 1612. Dec. V, cap. X, p. 228), says: "But the common houses themselves as hygh as a mannes Girdle, were also built of stone, by reason of the swelling of the lake through the floode, or washing flete of the Ryvers fallying into it. Vpon those grente foundations, they builde the reste of the house, with Bricke dried, or burned in the sunne, intermingled with Beames of Tymber, and the common houses have but one floore or planchin." We are forcibly reminded here of the houses of Itza on Lake Peten, which were found in 1695. "Hist. de la Conq. de los Itznex," Lib. VIII, cap. XII, p. 494. "It was all filled with houses, some with stone walls more than one rod high, and higher up of wood, and the roofs of straw, and some only of wood and straw. There lived in them all the Inhabitants of the Island brutally together, one relationship occupying a single house." See also the highly valuable Introduction to the second Dialogue of Cervantes-Salazar ("Mexico in 1554") by my excellent friend Sr. Icazbalceta (pp. 73 and 74).

* "Chinampa," derives from "Chinamitl." "Seta o cerca de canã," (enclosure of canes or reeds). Molina "Vocabulario", Parte II, p. 21). This mode of enclosing the ground was very common in the valley. A cluster of settlements between Churubusco and the Eastern lagoon has even obtained from it the name of "Chinampaneras" (frequently mentioned in Texozomoc and Durán.) The word "Chinamitl" has been adopted by the Quiché of Guatemala, changed into "Chinamit," and used to designate a *kinship*. (See "Popol-Vuh," pp. 301, 304, 306, where "Chinamitl" is translated as family.) Even in those remote regions where the territories of Yucatan and Guatemala join, or rather merge into each other, around Lake Peten, where the Nahuatl language is hardly known, we find in the 17th and 18th century, a tribe of "Chinamitas," who are said to have inhabited an area surrounded by Mexican agaves ("Magueyes") as a defensive hedge. ("Hist. de la Conq. de los Itznex," Lib. VIII, cap. XI, pp. 490-493.) It shows that the original signification of the word, at least, was connected with the notion of a family-lot.

intervening ditch, and throwing it on the chinampa, by which means the ground is raised generally about a yard, and thus forms a small fertile garden, covered with the finest culinary vegetables, fruits and flowers"³⁷

Each consanguine relationship thus gradually surrounded the surface on which it dwelt with a number of garden plots sufficient to the wants of its members.³⁸ The aggregate area thereof, including the abodes, formed the "*calpullalli*"—soil of the "*calpulli*,"³⁹ and was held by it as a unit; the single tracts, however, being tilled and used for the benefit of the single families.⁴⁰ The mode of tenure of land among the Mexicans at that period was therefore very simple. The tribe claimed its territory, "*ALTEPETLALLI*," an undefined expanse over which it might extend, —the "*calpules*," however, held and possessed within that territory such portions of it as were *productive*; each "*calpulli*" being *sovereign* within its limits, and assigning to its individual members for their use the minor tracts into which the soil was parcelled in consequence of their mode of cultivation. If, therefore, the terms "*altepetlalli*" and "*calpulalli*" are occasionally regarded as identical, it is because the former indicates the *occupancy*, the latter the *distribution* of the soil.⁴¹ We thus recognize in the calpulli, or kindred group, the unit of tenure of whatever soil the Mexicans deemed worthy of definite possession. Further on we

³⁷ "Six Months Residence and Travels in Mexico," by W. Bullock. London, 1824. Cap. XIII, p. 179. It is not devoid of interest to compare the descriptions of this rather superficial, though still truthful observer, with the account of the ancient Chinampas as preserved to us in Tezozomoc (cap. III, p. 9). Durán (cap. VI, pp. 50 and 51). The floats or rafts mentioned by these old authors were nothing else but the chinampas or "floating gardens." Therefore also Tezozomoc uses the term "camellon," or garden-bed. (See also Acosta, Lib. VII, cap. IX, p. 472.) Torquemada (Lib. XIII, cap. XXXII, p. 483). Veytia (Lib. II, cap. XV, p. 142).

³⁸ Durán (Cap. V). Tezozomoc (Cap. III, p. 8). Acosta (Lib. VII, cap. IX, p. 473). Torquemada (Lib. III, cap. XXXIII, p. 291. Lib. II, cap. XV, p. 101). Clavigero (Lib. II, cap. XVII).

³⁹ Alonso de Zurita (p. 51). Ixtlilxochitl ("Hist. des Chichim," cap. XXXV, p. 212). Torquemada (Lib. XIV, cap. VII, p. 515). Bustamante ("Tezcoco en los últimos Tiempos de sus antiguas Reyes," p. 232).

⁴⁰ Zurita ("Rapport, etc.," pp. 52, 56, 57, 60).—De l'Ordre de Succession observé par les Indiens, etc., etc. (copy of an anonymous MSS. from Simancas, contained in the Eugenia collection, and translated by Mr. Ternaux-Compins in his "Recueil de pièces, etc.," pp. 223 and 224.)

⁴¹ Zurita ("Rapport, etc.," pp. 51-64). Herrera (Dec. III, Lib. IV, cap. XVII, p. 138). Ramírez de Fuenleal, Bishop of San Domingo (Letter of 3 Nov., 1532, Mexico, to the Emperor Charles V. "Recueil" of Ternaux, p. 253). See also the Introduction to the "Real Ejecutoria de S. M. sobre Tierras y Reservas de Pechos y Paga. Perteneciente á los Caciques de Axapusco," in "Col. de Doc." of Icazbalceta (Vol. II, p. XIII).

shall investigate how far individuals, as members of this communal unit, participated in the aggregate tenure.

In the course of time, as the population further increased, *segmentation* occurred within the four original "quarters;" new "calpulli," being formed.⁴² For *governmental* purposes this segmentation produced a new result by leaving, more particularly in military affairs, the first four clusters as *great subdivisions*.⁴³ But these, as soon as they had disaggregated, *ceased* to be any longer *units* of territorial possession, their original areas being held thereafter by the "minor quarters" (as Herrera, for instance, calls them), who exercised, each one within its limits, the same sovereignty which the original "calpulli" formerly held over the whole.⁴⁴ A further consequence of this disaggregation was (by removing the tribal council farther from the calpules) the necessity for an *official building*, exclusively devoted to the business of the *whole* tribe alone.⁴⁵

⁴² This successive formation of new "calpulli" is nowhere explicitly stated, but it is implied by the passage of Durán which we have already quoted (Cap. V, p. 42). It also results from their military organization as described in the "Art of War," (p. 115). With the increase of population, the original kinships necessarily disaggregated further, as we have seen it to have occurred among the Quiché (See "Popol-Vuh" quoted in our note 7), forming smaller groups of consanguineal. After the successful war against the Tecpanecas, of which we shall speak hereafter, we find at least twenty chiefs, representing as many kins (Durán, cap. XI, p. 97), besides three more, adopted then from those of Culhuacan (Id. pp. 98 and 99). This indicates an increase.

⁴³ "Art of War, etc.," pp. 115 and 120.

⁴⁴ Torquemada (Lib. III, cap. XXIV, p. 295). "I confess it to be truth that this city of Mexico is divided into four principal quarters, each one of which contains others, smaller ones, included, and all, in common as well as in particular, have their commanders and leaders . . ." Zurita ("Rapport," p. 58-64). That the smaller subdivisions were those who held the soil, and not the four original groups, must be inferred from the fact, that the ground was attached to the calpulli. Says Zurita (p. 51.) "They (the lands) do not belong to each inhabitant of the village, but to the calpulli which possesses them in common." On the other hand Torquemada states (Lib. XIV, cap. VII, p. 345): "that in each pueblo, according to the number of people, there should be (were) clusters ("parcialidades") of diverse people and families . . . These clusters were distributed by calpules, which are quarters ("barrios"), and it happened that one of the aforesaid clusters sometimes contained three, four, and more, calpules, according to the population of the place ("pueblo") or tribe." The same author further affirms: "These quarters, and streets, were all assorted and levelled, with so much accuracy, that those of one quarter or street could not take a palm of land from those of another, and the same was with the streets, their lots running (being scattered) all over the pueblo." Consequently, there were no communal lands allotted to the four great quarters of Mexico as such, but each one of the kinships (calpules) held its part of the original aggregate. Compare Gomara (Vedia, Vol. I, "Conq. de Méjico," p. 424. "Among tributaries it is a custom, etc., etc." Also p. 440). Clavigero (Lib. VII, cap. XIV). "Each quarter has its own tract, without the least connection with the others."

⁴⁵ Compare Durán (Cap. XI, p. 87). Acosta (Lib. VII, cap. XXXI, p. 470). It appears as if the "tecpan" had not been constructed previous to the middle of the 14th cen-

This building was the "*tecpan*"⁴⁶ called, even by Torquemada "house of the community;"⁴⁷ it was, therefore, since the council of chiefs was the highest authority in the government, the "council house" proper. It was erected near the centre of the "*pueblo*," and fronting the open space reserved for public celebrations. But, whereas formerly occasional, gradually merging into *regular*, meetings of the chiefs were sufficient, constant daily attendance at the "*tecpan*" became required, even to such an extent, that a permanent *residence* of the head-chiefs *there*, resulted from it, and was *one of the duties of the office*.⁴⁸ Consequently the "*tlacatecuhtli*," his family, and such assistants as he needed (like runners), dwelt at the "official house." But this occupancy was in no manner connected with a possessory right by the occupant, whose family relinquished the abode, as soon as the time of office expired through death of its incumbent. The "*tecpan*" was occupied by the head war-chiefs only as long as they exercised the functions of that office.⁴⁸

tury,—the meetings of the tribe being previously called together by priests, and probably in the open space around the main house of worship. The fact of the priests calling the public meetings is proved by Durán (Cap. IV, p. 42). Acosta (Lib. VII, cap. VII, p. 468). Veytia (Lib. II, cap. XVIII, pp. 156, 159. Cap. XXI, p. 186). Acosta first mentions "*unos palacios, aunque harto pobres*." (Lib. VII, cap. 8, p. 470), on the occasion of the election of the first regular "*tlacatecuhtli*:" Acamapichtli. —Torquemada says (Lib. XII, cap. XXII, p. 290), that they lived in miserable huts of reeds and straw, erected around the open space where the altar or place of worship of Huitzilopochtli was built. The public building was certainly their latest kind of construction.

"From "*tecuhtli*" chief, and the affixum "*pán*," denoting a place. Therefore "place of the chiefs." Molina translates: "*casa ó palacio real, ó de algun señor de Saluo*" (II, p. 93). The word is also found in the Quiché of the "*Popol-Vuh*" (p. 306). "*Qui ticpan quib*"—Mr. E. Brasseur de Bourbourg acknowledges the Mexican origin of the word, and renders it by "*to divide into quarters*," although he says that in Mexican it signifies: palace or municipality.

"Torquemada (Lib. III, cap. XIV, pp. 269 and 270). "*Tecpancalli, que quiere decir, los Palacios Reales, ó el Alcazar, y casas de Señorio*" (Id: Lib. VII, cap. XXI, p. 119. Lib. XIII, cap. XXX, p. 477). But especially in the Sixth Book, 27th chapter, page 48, when, referring to the statements of Father Bernardino de Sahagun who says, that "*being in the city of Xuchimilco, he heard one night, etc. etc. . . . and that inquiring next day why that shouting had taken place,—the Indians answered, that from the Tecpan, or community (municipal house), they had been calling the macehuales to work.*"

"Nearly every author who attempts to describe minutely the "*chief-house*" (*tecpan*) mentions it as containing great halls (council-rooms). See the description of the *tecpan* of Tezcuco by Ixtlilxochitl ("*Hist. des Chichimèques*," cap. XXXVI, p. 247. "*The palace had two courts, the first and largest one serving as public square and market, for which it is still used at present. The second and interior one, was surrounded by the hall of the royal councils, where the King held two tribunals. In the centre of this court a large brasier was burning, which was never extinguished.*" Id. cap. XXXVIII), by Torquemada (Lib. III, cap. XXVII, p. 305. Lib. II, cap. XLIV, pp. 146 and 147. Lib.

About the time these changes occurred, the dignity of "tlacatecutli" seems to have become a permanent feature in the govern-

XI, cap. XXVI, pp. 354 and 355). Cortés himself (Vedia, I, carta segunda, pp. 34 and 35), speaks of the great halls contained in what he calls the "house of Mutezcuma." Bernal-Díez del Castillo (Vedia II, cap. XCI, pp. 86 and 87), confirms. See also Gomara (Vedia, I, p. 342 and 343. "Adonde él moraba y residía á la continua, llaman Tepac, que es como decir palacio . . . — . . . habia en él muchas salas.") Sahagun (Lib. VIII, cap. XIV, p. 302. "El palacio de los Señores ó casas reales, tenía muchas salas.") The tepcan was near the centre of the pueblo. See Gomara (Vedia I, p. 341. "Llegaron pues á un patio grande, recamera de los ídolos, que fué casas de Axialaca.") Cortés (Vedia, I, "Carta Tercera," pp. 74 and 76, etc.).

Bernal-Díez (Vedia, II, cap. LXXXVIII, p. 84, etc.). According to Sr. Icazbalceta ("México in 1554, note 38, p. 182, to the 2d Dialogue of Cervantes-Salázar), the "old houses of Montezuma" occupied (about) the square west of the present site of the Cathedral. The "new houses" were in place of where the National palace now stands. It is admitted that the Cathedral occupies the site of the main "teocalli," or the old centre of the ancient pueblo. (Torquemada, Lib. III, cap. XXII, p. 290). The correctness of this is conclusively proven by Sr. Icazbalceta in note 40, to the Second Dialogue of Cervantes (p. 184, and plate on p. 197, also the important dissertation on page 201), and in note 51. Thus the central location of the tepcan at Mexico remains established.

The permanent residence of the head war-chief, of his household, and of some assistants,—at the tepcan, is too frequently related to demand further proof, but it is not superfluous here to investigate the point: that this residence was connected,—not with the *person* and *descendancy* of that chief, but with the *office* alone.

We find it mentioned that the buildings occupied by the Spaniards, when they first came to the pueblo of Mexico were the "house of the father of Montezuma" (Axy-acatzin, probably). All the eye-witnesses concur in it and we need not refer to them in detail. There was, consequently, a house where the *kinship of the chief lived*,—aside from the tepcan, for since descent with the Mexicans was in the male line,—the son continued to occupy the dwellings of his father and (with communal living as practised in Mexico), of that father's consanguine relations. (That these sons and descendants were bred up to the ordinary pursuits of life, like any other Indian of Mexico, results from the speech as reported by Sahagun (Lib. V, cap. XV), of an old chief to his sons, wherein he exhorts them to cultivate the mechanical arts, and agriculture, adding the remarkable words, p. 117, "nowhere have I seen that any one may maintain himself through his noble descendancy alone.") In the case of Ahuitzotl, Durán relates (Cap. XLI, p. 337), "all the chief and principal men, with the whole tribe, going to the place where the sons of the Kings and great men were kept ("recogidos"), and where they instructed and furthered them in virtuous things, in the use of arms and good manners. Then they took out (Ahuitzotl) from the others, and brought him to the royal palace." Tezozomoc (Cap. I, X, p. 100), speaking of the election of Ahuitzotl says: "and these twelve Mexican chiefs went to bring the King Ahuitzotl from the house of Tlancahco." "And they said nothing to him until they were in the great palace" (Cap. LXI, p. 100). The election of Montezuma, however, gives occasion to that author, for another and very important statement (Cap. LXXXII, p. 143). "For, know ye, that many of the sons of the Kings past, are brought up now, some of which have become singers, others Cuachimecs, others Otomies, and the others are preparing to assume your titles of Tlacatecatl, Tlacocheñcatl, Tlocoyahuañcatl, Acolnahuacatl, Hezhuahuacatl, and a number of others who are and dwell in the principal house Calmecac." It is further exposed, how unwise it would be to elect an *unmarried* man, and finally Montezuma was chosen, whose age at that time is given at thirty-four years, and he was taken out of the Calmecac and escorted to the chief house (tepcan). But the strongest evidence results from the fact that the office was *elective*, and not hereditary. How, while the incumbent of an office changed, could the family of his predecessor still remain in possession of the official building?

ment of the Mexican tribe.⁴⁹ Nearly at the same time also, the Mexicans felt the necessity of opening communications with the tribes inhabiting the shores of the great marsh in the midst of which they were living,—in order to obtain some of the commodities produced or held by these tribes. Strong enough for *defence*, but too weak yet for *offence*, the Mexicans approached cautiously their nearest and most powerful neighbors, the Tecpanecas, with the view of securing permission to trade and barter, also for the purpose of obtaining the use of one of the springs of the mainland. This permission was granted, on condition that the Mexicans should pay a certain tribute. This was, however, no kind of feudal prestation, not being in the least connected with the tenure of the soil or occupancy of the territory,—but simply like unto a toll or tax placed on the faculty of barter. The further condition of military assistance being, in all likelihood, also exacted, the Mexicans thus became, not the subjects as it is commonly stated, but the weaker allies of the Tecpanecas.⁵⁰

⁴⁹We have previously alluded (note 22), to the fact that, anterior to Acamapitzin, the series of Mexican head-chiefs appear broken, whereas from the latter onward the office is reported as having been regularly filled. From that time on the term "palacio," as connected with the office, appears in the Spanish historians. See Durán, Tezozomoc, Acozta and Torquemada. (Especially "Monarchia Indiana," Lib. II, cap. XIV, p. 98).

⁵⁰All the authors agree upon the fact that the early life of the Mexican tribe on the site of Tenuchtitlan was one of secluded poverty, even of misery. See especially Torquemada (Lib. II, cap. XI, pp. 92 and 93). "In this place they settled ("se ranchearon") erecting poor and small habitations, surrounded by canes and grasses, called by them Xacalli, . . . where they spent their life miserably, the place being poor and destitute, and as people abandoned and poor, persecuted by all the inhabitants of the mainland, they subsisted upon roots of Tulli and other herbs, which grew on the place and on its surroundings." Then they began to fish. (See also Tezozomoc, cap. III. Durán, cap. V. Clavigero, Lib. II, cap. XVII. Sahagun, Lib. X, cap. XXIX, pp. 145 and 146. Veytia, Lib. II, cap. XV, p. 142). Durán and Tezozomoc both assert, that their first step, when the population began to increase, was to seek for traffic, which could only be secured through some kind of connection with their nearest and most warlike neighbors, which at that time were the Tecpanecas. ("Hist. de las Yndias de Nueva España," cap. V, pp. 41 and 42. "Empero juntandose todos en consejo ovo algunos que fueron de parecer que con mucha omildad se fuesen à los de Azcaputzalco y à los Tepanecas, que son los de Chynacac y Tacuba, y que se les ofreciesen y diesen por amigos y se les sujetasen con intencion de pedillos piedra y madera para el edificio de su ciudad" "Crónica Mexicana," cap. III, p. 9. It was finally agreed to barter, with as little concession as possible on their part). Most of the other authors have transformed this alliance with the Tecpanecas into a feudal allegiance, resulting from the occupation of the soil and from intermarriage. Both are disproved by Durán (Cap. V, p. 41: "pues era sitio y termino de los de Azcaputzalco y de los de Texcoco; porque alli llegaban los terminos del uno y del otro pueblo, y por la otra parte del mediodia, terminos de Culhuacan; . . ." "y que como señores ya de aquel sitio, sin hacer bux ni reconocer subjeccion à ninguno, pues su dios los auia dado aquel sitio, fuesen y comprasen piedra y madera, etc., etc.") and Tezozomoc (Cap. III, pp. 9 and 10).

Even Torquemada acknowledges the fact, that the Mexicans were originally independent (Lib. II, cap. XI), and that they were connected with the Tecpanecas through trib-

Through the establishment of direct relations with the outside, not only the public business of the Mexicans was increased, but, for the interchange of commodities, a standing market became indispensable. The pueblo of Mexico, formerly shunned by strangers, was now visited by delegations from neighboring tribes, and especially by traders. *Indian hospitality* required that these visitors should be harbored as guests, and the official house of the tribe was the place where this hospitality was afforded; it being the duty of those who occupied it to lodge and feed the strangers.⁵¹

ute (Lib. II, cap. XV, p. 99), a statement flatly contradictory. In his previous description of the early conditions of the tribes, he represents the Mexicans as outcasts, upon which no other tribe had any claim (pp. 92 and 93). No attempt was made to conquer them, since their retreat was too impenetrable (Torquemada, Lib. II, cap. XI, p. 93. Mendieta, Lib. II, cap. XXXIV, p. 146),—therefore their intercourse with the tribes of the mainland was *voluntary* (Acosta, Lib. VII, cap. VII, p. 467), and necessarily took the form of alliance or league. In this case *military assistance* was the main point. And indeed we do find, in what we may call the "Tezcucan" chroniclers, like Ixtlilxochitl, Torquemada, Veytia, and Clavigero, the Mexicans assisting the Tecpanecas (vide "Histoire des Chichimèques," cap. XV, p. 102. Cap. XVI, p. 108. Cap. XX, pp. 131 and 132. "Monarchie Indienne," Lib. II, cap. XIX, p. 108. "Historia Antigua de México," Lib. II, cap. XXVIII, pp. 236, 237, 238. Cap. XXXIX, pp. 241–243. Cap. XXX, p. 250. "Storia del Messico," Lib. III, cap. VIII). Bustamante ("Tezcoco en los últimos Tiempos," p. 2), who claims to follow Boturini, confirms. The military achievements of the Mexicans in the wars between the Tecpanecas and Tezcucans are not even claimed by these authors as a *due service*, but as the actions of *allies* or *confederates* of the former.

⁵¹ Cortés ("Carta Segunda," p. 35, in Vedia I). "The manner of his service was (of Montezuma), that every day at sunrise, about 600 Lords and leading men were in his house, which either seated themselves, or some walked around in some halls and corridors therein contained, and there remained and spent their time without entering where he was. And their servants and persons accompanying them filled two or three great courts ("patios") as well as the street, which was very large. They remained there without leaving it until night. And at the time they served to eat to the said Montezuma, they also served all these Lords as well as their attendants. The supplies or stores ("la dispensa y botillería") were open daily to all those who wished to eat and drink." See also Sahagún (Lib. IX, cap. I, to V, concerning the receptions to traders, by the head-chiefs). Torquemada (Lib. II, cap. LIXIX, p. 231. He states that all his subjected chieftains, 3,000 in number, their attendants included, ate at "his court." Lib. XIV, cap. I, p. 534, speaking of the messengers, says that they were lodged at the "Calpixca" or house of the community. In another place he mentions that house as the "Tecpan." See note 47). Durán describes several religious solemnities, at which the chiefs of neighboring tribes assisted, which the head-chief of Mexico *had to entertain* (Cap. XX, pp. 175 and 176. Cap. XXIII, p. 195. The chiefs of Tezcucoc, Tacuba, Chalco, Xuchimilco, etc., etc., were invited to attend, and on their coming they were quartered in the royal houses ("fueron aposentados en las casas reales"). Idem, cap. I, III, pp. 416–421. Cap. LIV, p. 428. The delegates from Chalco, Tlaxcallan, Cholullan, etc., etc., were lodged at the Tecpan ("en su mismo palacio real"). Cap. LVIII, p. 459). Tezozomoc (Cap. XXI, p. 33. Cap. LXI, p. 101, wherein Ahuitzotl is especially enjoined to "give to eat to his people." Cap. LXXXII, p. 144, "y los vasallos recibidos como á tales tributarios, aposentandolos, vistiendoles lo necesario para las vueltas de sus tierras . . . con los viejos y viejas mucho amor, dándolos para el sustento humano: regalados los principales teniéndolos en mucho, y dándoles la honra que merecen: llamarlos cada día al palacio que comían con ros." This indicates that the hospitality was obligatory, etc.). Zurita ("Rapport, etc.," p. 65). Herrera (Dec. III, lib. IV, cap. XXXI, p. 138).

With continued increase of the population, the "tecpan" alone did no longer suffice, thus each "calpulli" erected, within its own area, its own council place for the transaction of its interior business, lodging in it, after the model of the "tecpan," its own chief-men, and exercising there its share of the general hospitality. So Mexico became dotted with public constructions, necessarily distinguished by their size and arrangement from the rest of the buildings.⁵²

The chiefs and their families who resided in the official houses, and upon whom devolved the exercise of public hospitality,—continued to participate for their share in the use of the soil held and cultivated by the "calpulli" to which they belonged by descent. But whereas formerly they could improve these lands *themselves*, this became impossible with the increase of public business, and the task of cultivating them devolved, first upon their children and families, afterwards, when even these were required for the duties of the official household,—*upon the other members of the kin*. This was done, not in token of vassalage, but as a remuneration for the public services of the chiefs. The same took place in regard to the "tecpan" and its occupants. With the increase of intercourse, however, the scanty crops raised in this manner became insufficient, and a regular contribution, by each member of the different kinships, towards maintenance of the chiefs and the visitors they had to entertain, was instituted. Certain expanses were set aside, to be worked by communal labor, the products of which were exclusively devoted to what we may term "official purposes." Thus not only was there a tax created, voluntarily by the tribal components, for public purpose, but a new feature was introduced in the distribution of the soil. The mode of tenure,

⁵² These houses, sometimes called "calpulli," at other times "calpixca," were the *private palaces*, which the Spanish authors mention. They were but "official buildings;" probably connected with storehouses. As the tribe had its tecpan, so each calpulli, or localized kinship, its own council-house. This results from the organization of the kinship. See also "Art of War," pp. 103 and 104. What distinguished these constructions from the common house or abode ("calli"), were the halls ("salas"), and the "tecpan" was further distinguished by a lookout or tower. (Durán, cap. XXVI. p. 215. Tezozomoc, cap. XXXVI, p. 58). This distinction places it parallel to the so-called "palace" of Palenqué in Chiapas. Compare further: Zurita ("Rapport. etc.," p. 62). "At the annual gatherings, they (the chiefs of the calpulli) distribute gratuitously food and drink, to keep the Indians in good humor." Herrera (Dec. II, lib. VII. cap. XIII, p. 190). If we were to believe the picture presented of Mexico by the authors of the 16th and 17th centuries, Mexico would have possessed innumerable edifices of that kind.

however, was not changed, and no hereditary rights of property were called into existence in favor of the chiefs or their descendants.⁵³

For nearly a century after the first settlement of the Mexicans

⁵³ No mention is made of any tax or tribute gathered for official purposes among the Mexicans until under the last Montezuma, when it is generally admitted, as Gomara says: "That all tributed to the chief of Mexico" ("Conq. de Méjico," p. 345. Vedia, I). Without accepting the views expressed by Robertson ("History of America," Book VII, p. 291. Vol. III, 9th Edition, 1800), who ascribes to the influence of Montezuma a change in the plan of government of the Mexican tribe,—it still appears but natural that as long as the tribe was weak in numbers and resources, the original or typical form of communal institutions prevailed, whereas with increased population and consequent increase of governmental labor the members of the tribe were compelled to provide for the maintenance of their officers and their families. The first step was to cultivate such patches of land for them as they held being members of some *calpulli*. These lands were the "pillali," commonly treated of as "patrimonial estates." Torquemada, however, says (Lib. XIV, cap. VII, p. 546): "Another kind of lands they called pillali, or, so to say: Lands of Knights ("hidalgos") or nobles. Of these there were two kinds. In the first case the land was inherited with the nobility, and in the other, the chief gave lands to such as had achieved distinction and valor in war, and were ennobled therefor. To these the chief gave lands for their sustenance, but they could not hold renters ("terrazgueros") but might sell to other chiefs, as if the conditional gift from the chief had not existed: and neither of these two classes could dispose of their tracts to any macehual (common man—perhaps from "mail"—hand, and "ceualli"—shade,—the hand of some one who gives protection or shade), for in that case they lost them, and the chief entered in their possession. and they were applied to the *calpulli* in whose area they were located, in order that the said cluster might pay tribute according to the quantity of land contained;—also, if any one of them died without heirs, the chief inherited" Herrera (Dec. III, lib. IV, cap. XVII, p. 138). "These were lands which went with the Lordship, and which they called lands of the Lordship, and of these the Lords could not dispose, but rented them as they might and the rents were used in the house of the King, because there, besides all the principals, also ate the travelers, and the paupers, for which service the Kings were much honored and obeyed. What these rents did not furnish, was supplied by their patrimonial estates." Veytia (Lib. III, cap. VI, p. 165). "For the present we shall but say, that in each pueblo and place there was a tract of land of best quality, which was of the Kings or Lord of the estate For the sowing and working of these lands the *calpixque*, an officer of the republic (state) in each pueblo, daily designated the common people who had to work them, and all the fruit belong integrally to the chief for the maintenance of his house." Ixtlilxochitl (Hist. des Chichim. cap. XXXV, pp. 242, 243 and 244). Bustamante ("Tezcoco en los Ultimos Tiempos, etc." Part III, cap. V, p. 234, etc.). Oviedo ("Hist. gen. y nat." lib. XXXIII, cap. LI, p. 536, of 3d vol.) Now we have already established, that individual tenure of the soil was unknown, it is further proved that the offices were non-hereditary, we cannot fail, therefore, to recognize. 1°. In the "pillali" of Torquemada the original "chinampa" held by chiefs as members of a kinship.

2°. In the tracts of Herrera and Veytia "official lands," specially reserved for the wants of official houses and their occupants. These lands went "with the office."

No date can be assigned to the introduction of this new feature among the Mexicans but we cannot help being struck by the fact that the Tezcucan chroniclers make special mention of it, connecting it with the time when Nezahualcoyotl became chief of Tezcoco (See Ixtlilxochitl "Hist. des Chichim." cap. XXXV. Veytia, Lib. III, cap. VI, p. 165. Bustamante, Part III, cap. V). The connection is implied rather than expressed, and but excuses the suggestion: that such a change might have occurred about the close of the fourteenth and beginning of the fifteenth centuries. Of course we allude here to the Mexicans alone, and not to the tribes of the mainland.

in the lagoon, they were confined to their original area and to such artificial garden-beds as they accumulated around it. Meanwhile their allies on the mainland, the Tecpanecas, were making themselves formidable in warfare to the other tribes; the Mexicans assisting. The moment arrived however, when the latter, having secured a defensive position, acquired military experience and greater strength, sought to free themselves from the tax which had heretofore burthened their trade and barter. War ensued, and the Mexicans, now in turn supported by enemies of the Tecpanecas, completely overthrew the power of the latter tribe. By this victory, they not only secured a foothold on the mainland, but became at once one of the ruling tribes of the western valley of Mexico.⁵⁴

The only territorial accession gained by the Mexicans, in fact the only one claimed by them, appears to have been the hill of Chapultepec. They already had the use of the springs rising there, now they acquired their full and unincumbered possession.⁵⁵ The remainder of Tecpanecan territory was left to that tribe intact, and in no manner annexed to that of Mexico. The organization of the tribe, its government, and distribution of the soil, remained equally undisturbed. No Mexican representatives were delegated to rule Azcaputzalco or Cuyuacan. But the Mexicans in turn subsequently controlled the military power of the conquered tribe, and, besides, it was thereafter held to tribute. This

⁵⁴ Durán (Cap. IX and X). Tezozomoc (Cap. VII, VIII, IX, X, XI, XII, XIII, XIV and XV). Acosta (Lib. VII, cap. XIII and XIV). Herrera (Dec. III, lib. II, cap. XII and XIII). Ixtlilxochitl (Hist. des Chichim., Cap. XXX, XXXI and XXXII). Torquemada (Lib. II, cap. XXXV, XXXVI and XXXVII). Veytia (Lib. II, cap. I, LI, LII, LIII and LIV). Clavigero (Lib. III, cap. XVII, XVIII and XIX). Bustamante (Part I, cap. XXIII). Prescott ("History of the Conquest of Mexico," Book I, cap. I, pp. 15 and 18).

⁵⁵ It is even stated that the petition of the Mexicans for stone and wood to construct therewith a channel leading from Chapultepec to their pueblo, was the cause of the war. See Durán (Cap. VIII, p. 63). Tezozomoc (Cap. V, pp. 11 and 12). Acosta (Lib. VII, cap. II, p. 478). "Con esta ocasion, ora sea que ellos de proposito lo buscasen, para romper con los Tepanecas, ora que con poca consideracion se moviesen, al efecto embiaron una embaxada al Rey de Azcapuzalco muy resoluta diziendo, que del agua que los aula hecho merced, no podian aprovecharse, por auerseles desbaratado el caño por muchas partes, por tanto le pedian los proviniése de madera, y cal, y piedra, y embiasse sus ofiçiales que con ellos hiziesen un caño de cal y canto que no se desbaratasse.") Chapultepec remained specifically Mexican soil thereafter, it being the source of fresh water for the pueblo of Mexico. When Cortés moved against the tribe the second time, he seized the hill after a short but desperate struggle. (Cortés "Carta Tercera," p. 71, Vedia I. Bernal-Diez, cap. CL, p. 176, Vedia II. Clavigero, Lib. X, cap. XVII). See also Icazbalceta, in his Introduction to the 3d Dialogue of Cervantes, Balazar ("Mexico in 1554," pp. 256 and 257). Veytia (Lib. III, cap. I, p. 142, of 3d vol.). Bustamante ("Tezcoco en los ult. Tiempos." Parte IIa, cap. I, p. 148).

tribute was gathered by stewards, the only Mexicans permanently residing on Tecpanecan soil, and it was distributed in accordance with the tribal organization: among the calpules for the use of their public households and of their individual members, and to the "tecpan" for the maintenance of the tribal government and business; out of the former, a certain share was reserved for the purpose of religious worship.⁵⁶

This tribute consisted of objects held and acquired by the Tecpanecas through trade, war and their own manufacture. But it also included the products of their *horticulture*. These had to be raised annually either on their own garden-beds, or on a certain expanse reserved in each "calpulli" for the production of tribute. The Tecpanecas having the same system of distribution of the soil as the Mexicans, and the kindred group being the unit of their organization also, the latter method was naturally resorted to. Therefore in each one of the areas held by the calpules of the conquered tribe, a certain plot was set off, to be tilled in common by the members of the kin, for the benefit of their conquerors.

⁵⁶ Acosta says (Lib. VII, cap. XIII, p. 485), that they took all the lands for themselves: "with this, those of Azcapuzalco were left so poor, that they had not even crops of their own." Durán (Cap. IX, p. 79. "They went to Azcaputzalco and seized ('se entregaron') its lands and distributed them among themselves.") Tezozomoc (Cap. IX, p. 16 and 17). It is difficult to connect these and similar statements with the positive facts asserted by Zurita (Rapport sur les différentes classes de chefs de la Nouvelle Espagne.) "The sovereign of Mexico had beneath him, in all matters relating to warfare, those of Tacuba and of Texcuco; in regard to all others, their powers were equal, so that neither of them intervened in the government of the others" (p. 11),—by Voytia (Lib. III, cap. III, p. 161), and even by Ixtlilxochitl ("Hist. des Chichim.", Cap. XXXIV, p. 235), which establish the complete *territorial* independence of the Tecpanecas from the Mexicans; even after their defeat. Durán also says (Cap. IX, p. 77): that the Tecpanecas promised tribute and lands. Tezozomoc (Cap. IX, p. 16) confirms, stating that they offered tribute, personal service, and assistance in war. We cannot conciliate these different reports except by admitting that the Tecpanecas submitted to the ordinary manner of Indian conquest, namely: to tribute, to military aid, and for the purpose of tribute, to the reservation of certain tracts whose crops were to go exclusively to the conquerors. Of the latter we have positive proof. See Durán (Cap. IX, p. 79). Tezozomoc (Cap. IX, p. 17). Only these authors mention that these tracts went to persons or individuals. But how is this possible, since no individual possession of land appears in Mexico, at the time of the conquest even; as we shall see further on. The tracts in question must, therefore, have been given to such persons as representatives of certain kinships, or "calpules," as Tezozomoc intimates, saying (Cap. XV, p. 21): "and let us distribute the lands among all of us, in order to hold of them some pastime and sustenance for us, our children and heirs." Besides, Durán asserts: that the division took place for the benefit of the chiefs, and of the quarters ("barrios," or calpules), which tends to prove that there were "official lands" and "lands of the kinship" set off for the conquerors on the conquered territory. That a portion of the latter provided for religious purposes, is established by Acosta (Lib. VII, cap. XIII, p. 485), and by Durán (Cap. IX).

The crops raised thereon were again apportioned by the latter among themselves as we have explained previously, but they did not acquire any title to the *possession*, still less to the *ownership* of the soil itself.⁵⁷ Once started on their career of conquest, the

⁵⁷ See Durán (Cap. IX, p. 79 and 80). Tezozomoc (Cap. IX, p. 16. "Para amansar y traher á paz á los Mexicanos que tan pujantes y orgullosos estaban contra los Tecpanecas, digéron estos: señores Mexicanos, como vencidos que somos de vosotros, y os tenemos dadas nuestras hermanas y hijas que os sirvan y nuestras mugeres, y nos proferimos á vasallage, y de todas las veces que fuéredes en guerras y batallas con estrafias, léremos nosotros como vasallos, y llevarémos á cuestras vuestro matalotage, y llevarémos á cuestras vuestras armas, y en caso que en las guerras, algunos, á alguno de los Mexicanos muere, nos proferimos á traheros los cuerpos cargados á vuestra tierra, ciudad, á ser con honra enterrados, y venidos que seais de las guerras, y antes y despues barerémos, y regarémos, vuestras casas, tendrémos cuidado de vosotros con nuestro servicio personal, pues así estamos obligados conforme á usanza de guerra, y nosotros de servidumbre." The Mexicans then spoke to themselves and said: "you now have heard the promises, subjection, and domination to which the Tecpanecas of Azcaputzalco submit, offering to give us wood, planking, stones and lime for our houses, to plant for us maize, beans, calabashes, spices of the country, chile, and tomaté, and to be our servants, and the principals of them to become our stewards . . .") This expresses about the amount and measure of subjection of one tribe to another. Zurita further informs us (pp. 66 and 67). "When the Kings of Mexico, Tezcucoc and Tacuba conquered a province, they used to retain all the native chieftains in their offices; whether they were supreme or but inferior. The people always kept its property, finally the usages and customs of the established government were respected. These sovereigns designated territories proportionate to their conquests: the vanquished tilled them in common and made plantings appropriate to the soil. This kind of tribute, or homage ("homage-lige"), was paid to officers ("des intendants") established by the sovereigns of Mexico, of Tezcucoc, or Tacuba, according as the vanquished had become vassals of one or of the other prince. Besides, they were liable to military service, which obligation rested indiscriminately on all the conquered provinces. The chiefs remaining Lords as before the war, preserved civil and criminal jurisdiction in the full extent of their domain." Nevertheless, we have detailed reports about certain lands having been applied by the Mexicans to certain chiefs (Tezozomoc, cap. XV, p. 21): it was done at the time that such chiefs received certain titles or dignities. These titles and dignities, however, were not hereditary, but elective (Durán, cap. XI, p. 163). "To these four chiefs and titularies, after they were elected princes) they made them belong to the royal council as presidents and members ("oydores") of the supreme council, without whose opinion (or consent, advice "parecer") nothing could be done, and the King being dead, from these and no others his successor had to be chosen, and neither could they be placed in such positions unless they were sons or brothers of Kings, and thus, if one of these four had been promoted, they put another one in his place, and it is to know that they never chose a son of him whom they elected for King, or of him who died, because as I have said, the sons did not obtain the titles through inheritance, but by election. Thus, whether son, brother, or cousin, if the King and his council elected him to any title, it was given to him,—it being sufficient that he belonged to that lineage and was a near relative, and thus the sons and brothers went succeeding little by little, and the title and Lordship remained in that generation (descendancy), being elected successively. These Lords had vassals who to them paid tribute, small pueblos, rented lands ("estancias terrazgueros") that gave them all kinds of supplies and clothing" It is also stated that the Mexicans, when they conquered the Tecpanecas, distributed of their lands to the quarters (Cap. IX, p. 79. Durán,—and Acosta, Lib. VII, cap. XIII, p. 485. "Señalaron tambien tierras de comun para los barrios de Mexico á cada uno las suyas, para que con ellas acudiesen al culto y sacrificio de sus dioses.")

Mexicans, supported by their allies, sought to extend their power. The tribes of the southeast, the Xochimilcas, the Chinampanecas, (also called the four chieftaincies: "Nauhteuctli") were the first to become their prey. Their fate, after they had once submitted, was the same as that of the Tecpanecas. The territory was not annexed, neither was the organization changed. But they were held to military assistance, and especially to tribute. The latter drew forth, as a consequence, the establishment of tribute-lands, like those which we have already met with at the close of the Tecpanecan war.⁵⁸

When finally, after a contest of unusual length and bitterness, the tribe of Chalco also had to submit to the same conditions of tribute and warlike control,⁵⁹—the Mexicans were really the leading power of the valley.⁶⁰ Their means of subsistence, besides, had greatly increased through tribute, among which the crops of the tribute-lands were most conspicuous—as well as through trade. One single tribe of the "Nahuatl" of the valley remained unsubdued, the Aculhuas of Tezcuco. Instead, however, of engaging in a deadly conflict, the result of which might have been equally

If we attentively consider the above, we find:

- (1). That no change was made in the tenure of lands, and no conversion of the Tecpanecan territory into a Mexican domain was effected by the conquest.
- (2). That certain expanses were set aside, which continued to be held by the conquered, and worked by them after the usual communal plan, but whose crops went exclusively towards the *tribute*.
- (3). That these crops were divided, corresponding to the organization of the Mexicans, —between the official requirements—"tecpan"—("calpulli" as official house for the quarters)—the people (quarters "barrios,") and worship. The analogy with Peru (Inca, worship and people), is striking.

The distribution of lands to certain chiefs therefore, mentioned in connection with the conquest of the Tecpanecas, simply indicates that these lands were applied to the maintenance of such offices, and not an hereditary "fief" to a certain family. Durán positively expresses, that the office belonged in the "kin" ("lignea"—"generation,") and was not hereditary. The lands therefore pertained to the office as a governmental feature of the kinship or calpulli, and not to the person or offspring of any incumbent. In the same way, certain tracts (or rather their crops), went to the tecpan or its occupants, as a governmental feature of the *tribe* (Bustamante, Parte III cap. V, p. 233).

⁵⁸ Durán (Cap. XII. Id. XIII, p. 114. XIV, p. 123). Tezozomoc (Cap. XVII, p. 28, XVIII, p. 29), and Acosta.

⁵⁹ Durán (Cap. XVII, p. 152). Tezozomoc (Cap. XXVI, pp. 39 and 40). Acosta (Lib. VII, cap. XVI, p. 463), etc. etc.

⁶⁰ Out of the five Nahuatl tribes who had originally settled in the valley of Mexico, three were then subjected to the Mexicans. Consequently the Tezcucoans or Aculhuacans alone remained. Territorially, the latter probably covered the larger expanse, but the Mexicans and their allies had the advantage in position and numbers.

disastrous for both parties, negotiations commenced, terminating with the formation of a *military confederacy*, under the *leadership* of Mexico.⁶¹

It appears that in this, as in all other transactions of the same nature, mutual concessions had to be made. Thus, while the Tezcucans conceded the military command to the Mexicans, the latter had to admit into the confederacy that part of the Tecpanecas who, since the destruction of Azcaputzalco, recognized in Tlacopan (Tacuba) their chief pueblo. Through *tezcucan* influence it is even probable that the tribute heretofore paid to the Mexicans by that tribe, was relinquished by the former.⁶²

The following seem to have been the leading features of the confederacy.

It consisted of the three tribes of Mexico, Tezcuco and Tlacopan. Each of these tribes was territorially independent; as well as in the management of its own affairs: from the two others.⁶³

The military command of the forces belonged to the head-war-

⁶¹ Durán (Cap. XIV, p. 124. Cap. XV, pp. 125-132), mentions a *sham* fight between the Mexicans and Tezcucans, ending in a confederacy. Acosta (Lib. VII, cap. XV, p. 490), confirms. Herrera (Dec. III, lib. II, cap. XIII, p. 64), speaks of a voluntary "submission" by the Tezcucans. Tezozomoc (Cap. XIX and XX), asserts that the Tezcucans were actually conquered by the Mexicans. On the other hand, Ixtlilxochitl ("Hist. des Chichim." Cap. XXXIV). Torquemada (Lib. II, cap. LVII, p. 175). Veytia (Lib. III, cap. V). Bustamante ("Tezcoco" Parte IIa, cap. V), affirm that a fight took place, in which the Mexicans were worsted, and after which the Tezcucan feudal "empire" was firmly established. The truth probably lies between the two extremes, and is recognized as such by Torquemada (Lib. II, cap. LVII, p. 175). Durán (Cap. XIV, p. 124), and finally expressed by Zurita ("Rapport," p. 11), as follows: "The sovereign of Mexico was superior to those of Tacuba and Tezcuco in matters touching warfare; in all others, their powers were equal, so that neither of them meddled with the government of the others." Herrera has adopted this view, copying almost textually (Dec. III, lib. IV, p. 133, of chapter XV).

⁶² The only confession found in specifically Mexican authors on the subject of the Tecpanecas of Tlacopan is the quotation from Durán (Cap. XIV, p. 123). But Ixtlilxochitl ("Hist. des Chichim." Cap. XXXII, pp. 218 and 220.) says: "It is plainly visible from this song that the three dynasties named were the principal ones of Mexico, and that the King of Tlacopan was regarded as equal to those of Mexico and Tezcucan." Torquemada (Lib. II, cap. LVII, p. 175. Cap. XXXIX, p. 144). Veytia (Lib. III, cap. III). Clavigero (Lib. IV, caps. II and III), and Bustamante (Parte IIIa, cap. II, pp. 161, 163 and 163).—All are positive in affirming that the Tezcucans insisted upon having the Tecpanecas as a third member. The Mexican authors not contradicting, and impartial sources, like Zurita and Herrera,—establishing the fact of equality of power, and territorial autonomy (See note 61), we, therefore, feel justified in recognizing the fact as established.

⁶³ Alonzo de Zurita ("Rapport sur les différentes classes de chefs de la Nouvelle-Espagne," p. 11).

chief of the Mexican tribe, with power probably to delegate the same.⁶⁴

Each of the three tribes elected its head war-chiefs according to its own customs; but the installation in office, *the investiture*, took place with the concurrence of the head-chiefs of the other tribes. This was especially the case in Mexico, where the "tlacatecuhtli" became commander-in-chief of the confederacy.⁶⁵

Each tribe could carry on its own wars, defensive as well as offensive, independently; but if required, the others had to assist, in which case the Mexicans took the lead.⁶⁶

Consequently, each tribe could have its *own conquests*, and levy its *own tribute* upon tribes which it had conquered *alone*.⁶⁷

But wherever the *confederacy* had subjugated a foreign tribe, the spoils as well as all the subsequent tribute were divided among the three members as follows: Mexico and Tezcuco each two-fifths, and Tlacopan one-fifth.⁶⁸

The establishment of this confederacy did not, in any manner whatever, alter the principles already recognized for the tenure and distribution of the soil. It only shows, and the subsequent career of the confederation further supports it, that these principles were common among the three tribes concerned. Wherever their conquests extended, the conquered were not annexed, but simply subjected to tribute, their territory and tribal autonomy were preserved, and no change introduced in the distribution of the soil beyond the reservation of tracts for the raising of tribute. Stewards, "calpixca," were the only representatives of the confederacy or of any of its members, residing permanently with the

⁶⁴ Zurita (p. 11). Herrera (Dec. III, lib. IV, cap. XV, p. 133).

⁶⁵ Mendieta (Lib. II, cap. XXXVII, p. 153). Torquemada (Lib. XI, cap. XXVI, p. 353). Durán (Cap. XXXII, p. 235; cap. XXXIX, p. 303; cap. XLI, p. 325; cap. LII, p. 409). Tezozomoc (Cap. XLI, p. 66; cap. LVI, p. 91; caps. LX and LXI, p. 100; cap. LXXXII, pp. 142 and 143). Ixtlilxochitl ("Hist. des Chichim.", Cap. I, pp. 2 and 3; cap. LX, p. 49; cap. LXX, p. 102). See also Veytia, — but especially Clavigero, who is very positive (Lib. IV, cap. III. "Besides, the two Kings (of Tezcuco and Tacuba), were honorary assistants to the election of the Mexican Kings. They had but to sanction the election . . .")

⁶⁶ Zurita (p. 67). Herrera (Dec. III, lib. IV, cap. XV, p. 133). Torquemada (Lib. XIV, cap. VIII, pp. 546 and 547).

⁶⁷ Herrera (Dec. III, lib. IV, cap. XV, p. 133).

⁶⁸ Torquemada (Lib. II, cap. LVII, p. 175; cap. XXXIX, p. 144; lib. XIV, cap. VIII, pp. 546, 547 and 548). Zurita ("Rapport," p. 12). Ixtlilxochitl (Cap. XXXII, pp. 219 and 220). Veytia (Lib. III, cap. III, pp. 164 and 165). Bustamante ("Tezoco, etc.," Parte II, cap. III, pp. 163 and 165). Clavigero (Lib. IV, cap. III).

tributaries.⁶⁹ In short, the same treatment to which the Tecpanecas had once submitted, at the hands of the Mexicans *alone*, was the one received by foreign tribes from the confederacy, from the time of its formation down to its overthrow by the Spaniards. All the conquests intervening did not therefore result in the formation of a *state* based upon feudal notions of territorial domain and vassalage, but simply in a conglomerate of scattered tribes often mutually inimical, who looked with terror to the valley of Mexico as the abode of their conquerors. Over these conquerors the Mexicans held military direction, and the name of Mexico, or its equivalent of "Culhua," was best known. As early as 1518, Juan de Grijalva heard it on the coast of Tabasco.⁷⁰ This wide diffusion of the *name*, coupled with the still more extensive spread of the language,⁷¹ and the undisguised dread of the natives before that very name, has created in the minds of Europeans the picture of a Mexican nation, state, and feudal Empire; whereas there was nothing else but the military confederacy of the three leading Nahuatl tribes of the valley of Mexico.⁷²

This rapid sketch of the history of the Mexicans, up to the time when they confederated with the tribes of Tezcuco and Tlacopan, has shown to us that in no case was the notion of public domain, of governmental lands, current among the tribes of Mexico. The tribe held no domain,—conquest of another tribe by it did not (as feudal conditions would imply) convert the conquered territory into an annex or dependency of the conqueror, as far as the possession of the soil was concerned. Finally, the confederacy itself, as such, did not even hold a territory of its own, still less did it claim possession of areas occupied by tributary tribes.

It remains now for us to revert again to the distribution of the

⁶⁹ Zurita ("Rapport, etc.," p. 67). "This kind of tribute or allegiance ("homage-lige") was paid to officers established by the sovereigns of Mexico, of Tezcuco, or of Tacuba, etc., etc. . . . The chief remaining sovereign, as before the war, retained the civil and criminal jurisdiction over all their dominions" (Id. p. 66). Andrés de Tapia ("Relacion, etc." Col. de Documentos," vol. II, p. 579). "Art of War" (p. 100, note 17). Torquemada (Lib. XIV. cap. VIII. p. 547). Veytia (Lib. III. cap. VI. p. 197).

⁷⁰ "Itinerario de l'Armata del Re Catholico in India Verso la Isola de Iuchathan del Anno M.D. XVIII," in Col. de Docum., vol. I, p. 293, taken from Ramusio. Originally published (1522), in the "Itinerario de Varthema," an exceedingly rare book. Bernal-Diez ("Hist. verdadera," Vedia II, cap. XI. p. 10).

⁷¹ Orozco y Berra ("Geografía de las Lenguas, etc.," Parte II, p. 83, and the splendid ethnographical chart).

⁷² Zurita ("Rapport, etc.," p. 11. "The province of Mexico was subject to three principal chiefs, etc. etc. . . .")

soil, and to establish its customs at the time when the Europeans first trod the Mexican shore.

We readily distinguish several classes of lands, bearing each a different name, besides the "altepetlalli," or tribal territory or range. The latter was the widest circumscription for which the Nahuatl language had a term. (The word "Anahuac," which is often used, is utterly inapplicable, as we have elsewhere shown).⁷³ No other idea of tenure was connected with it, beyond that of *tribal occupation*.

Each of the numerous tribal areas, overrun by the confederacy (provided the natives were of a sedentary character), contained what we have ventured to call tribute-lots. The name given to these tracts was possibly "yaotlalli," but rather "milchimalli" ("lands of war," and "shield-lands").⁷⁴ As before said, the soil of these tracts was still held in original tenure by the kinships composing the conquered tribe, but the *crops* went towards the tribute. There is no indication about the size of these areas, and they were the only ones directly connected with the conquerors.

Of those tracts whose products were exclusively applied to the governmental needs of the pueblo or tribe itself (taken as an independent unit) there were, as we have already seen, two particular classes:

The first was the "tecpan-tlalli:"—land of the house of the community, whose crops were applied to the sustenance of such as employed themselves in the construction, ornamentation, and repairs of the public house. Of these there were sometimes several within the tribal area. They were tilled in common by special families who resided on them, using the crops in compensation for the work they performed on the official buildings.⁷⁵

⁷³ Brasseur de Bourbourg ("Ruines de Palenqué," Cap. II, p. 32, and note 10) makes the very sensible remark that the name "Anahuac" did not at all apply to a "state" or "empire," etc., but in general to all countries situated in the neighborhood of considerable bodies of water;—such as lakes or large streams; or the shores of the sea.

⁷⁴ MSS. from Simancas "De l'ordre de succession observé par les Indiens relativement à leurs Terres et à leurs Territoires communaux," translated by Mr. Ternaux-Compins in "Recueil de Pièces," etc., pp. 223 and 224. Torquemada (Lib. XIV, cap. VII, p. 546). Clavigero (Lib. VII, cap. XIV. He includes them positively in the soil of the kinships, and treats them as communal lands, the produce of which furnished military supplies). "Yaotlalli" is improper (see "Art of War," p. 135, note 158), but "Milchimalli" is possible.

⁷⁵ From "tecpan," chief-house (Molina. Parte II, p. 95), and "tlalli," soil (Id. p. 124). Torquemada (Lib. XIV, cap. VII, p. 546). "There was another class of lands which belonged to the chief's income; and those who dwelt on them and cultivated them were

The second class was called "tlatoca-tlalli"—land of the speakers. Of these there was but one tract in each tribe, which was to be "four-hundred of their measures long on each side, each measure being equal to three Castilian rods."⁷⁶ The crops raised on such went exclusively to the requirements of the household at the "tecpan," comprising the head-chief and his family with the assistants.⁷⁷ The tract was worked in turn by the other members

called Tecpanpouhqui, or Tecpantlaca, which signifies: people of the palace and renters of the King. Such were held to keep in repair the royal palaces, clean the gardens, and to attend to the cleanliness and to the necessities of the royal palaces. They were regarded with much respect, as people most directly connected with the houses of the King. When the Lord sallied forth, they accompanied him, and they paid no other tribute but bouquets (*Ramilletes*, "flower-bunches") and birds of all kind, which they offered to the King. Such lands descended from father to son, but they could not sell them, nor dispose of them in any way, and if one of them died without heirs, or left the place, his house and lands remained for those of his kin ("parcialidad") to put another in his place, according to the commands of the King, or of the Lord.—Herrera (Dec. III, lib. cap. XV, p. 133).—Veytia (Lib. III, cap. VI, p. 196). "Besides these each pueblo also had other kinds of lands called tecpantlalli, or lands of the palace or rentals of the chief, because its crops also went integrally towards the constructions and repairs of the palaces of the Kings, and towards other expenses aside from the sustenance. The people who cultivated them were also plebeians, but they were set apart for it in each place, and were called tecpanpouhque or tecpantlaca, that is, people pertaining to the palaces, and they could not work any other lands." Ixtlilxochitl ("Hist. des Chichimèques cap. XXXV, p. 242. "There were others known by the name of Tecpantlalli, or lands which depend from the palaces of the Lords. The Indians tilling them were called tecpanpouhque, or people connected with the palaces of the Lords"). Bustamante ("Tezcoco," etc., Parte III, cap. V, pp. 233 and 234). Clavigero (Lib. VII, cap. XIV). "The ownership of the crownlands, called Tecpantlalli, remained in the King, but certain gentlemen called Tecpanpouhque or Tecpantlaca, i.e. people of the palace, had the enjoyment thereof. These paid no tribute but flowers and certain birds which they offered to the King in token of allegiance. But they were obligated to keep the royal palace in repair, or to construct new ones if needed; to tend to the royal gardens, and to care for the vassals in their district. It was their duty to attend court, to escort the King, if he appeared in public; and thus they were highly considered. If one of them died, his son succeeded in all his duties, but he lost his rights by removing from the place, in which case the King gave him the use of another tract, or left it to the community, in whose area the land lay, to assign to him another piece."

The above quotations show conclusively that the soil of the "tecpantlalli" was held and vested in the King, and only the crops went to certain official purposes. The occupants thereof were not serfs, since it is implied that they might remove at their pleasure, but, as any other members of a *calpulli*, in accordance with what we shall hereafter show, they lost by removal their right of use to that particular tract. They were properly the "official artisans."

⁷⁶ Ixtlilxochitl (Hist. des Chichim., cap. XXXV, p. 242). Vedia (Lib. III, cap. VI, p. 195). "This had to be four-hundred of their measures in square ('encuadro,' each side long); each one of these being equal to three castilian rods. . . ." See "Art of War" (p. 244, note 183). "The rod" (*vara*) is equal to 2.78203 feet English (Guyot).

⁷⁷ From "tlatoca" speakers, or "tlatocani" speaker, and "tlalli." Simancas M. S. S. on the customs of succession ("Recueil de Pièces, etc." p. 223). Herrera (Dec. III, lib. IV, cap. XVII, p. 138). "There were other kinds of lands that were attached to the lordship (office), which they called of the lordship, and of these the Lords could not dispose, and rented them to whom they pleased, drawing much rent from them,

of the tribe, and it remained always public ground, reserved for the same purposes.⁷⁸

Both of these kinds were often comprised in one, and it is even not improbable that the first one may have been but a variety of the general tribute-lands devoted to the benefit of the conquering confederates. Still, the evidence on this point is too indefinite to warrant such an assumption.

While the crops raised on the "tecpan-tlalli," as well as on the "tlatoca-tlalli," were consumed exclusively by the official houses and households of the tribe, the soil itself which produced these crops was neither claimed nor possessed by the chiefs themselves, or their descendants. It was simply, as far as its products were concerned, official soil.⁷⁹

The establishing and maintaining of these areal subdivisions was very simple with the tribes of the mainland, since they all possessed ample territories for their wants and for the requirements of their organizations. *Their* soil formed a contiguous unit. It was not so, however, with the Mexicans proper. With all their industry in adding artificial sod to the patch on which

spending it in the house of the King.") *Ixtlilxochitl* (*Ibid.* cap. XXXV, p. 242. "In the best location of the territory there was set off a field, which held exactly four hundred measures in length and breadth. This was called *Tlatocatlali* or *Tlatocamilli* that is: land or plantation of the Lord, and also *Itonal Yutlacal*, or lands on which the inhabitants are compelled to work.") Oviedo (*Lib. XXXIII*, cap. II, p. 537). Veytia, (*Lib. III*, cap. VI, p. 195, confirms *Ixtlilxochitl* almost verbally, adding: "For the sowing and cultivation of these the *calpixque*, which was an officer of the community in each pueblo, daily designated those who had to attend to it, out of the plebeians and tributaries, and all the crops went to the Lord for the maintenance of his house ('casa' family)." Zurita does not use the term which we have adopted, because he is chiefly struck by the communal tenure, as exhibited in the "calpulalli." The fact of their being communal land, though set off for a special purpose, and *not owned* by the chiefs, is plain.

⁷⁸ Veytia (*Lib. III*, cap. VI, p. 195). It is superfluous to revert to the erroneous impression, that the chiefs might dispose of it.

⁷⁹ "Patrimonial Estates" are mentioned frequently, but the point is, where are they to be found. Neither the "tecpan-tlalli" nor the "tlatoca-tlalli," still less the "calpulalli," show any trace of individual ownership. "Eredad" (heirloom) is called indiscriminately "milli" and "cuemtl" (*Molina Parte Ia*, p. 57). The latter is also rendered as "tierra labrada, ó camellon" (*Molina. Parte Ila*, p. 26). It thus reminds us of the "chinamtl" or garden-bed (as the name "camellon" also implies), and reduces it to the proportion of an ordinary cultivated lot among the others contained within the area of the calpulli. It is also called "tlalli," but that is the general name for soil or ground. "Tierras qeredades de particulares, juntas en alguna vega," is called "tlamilli." This decomposes into "tlalli" soil, and "milli." But "vega" signifies a fertile tract or field, and thus we have again the conception of communal lands, divided into lots improved by particular families, as the idea of communal tenure necessarily implies.

they had originally settled, the solid surface was eventually much too small for their numbers, and they themselves put an efficient stop to further growth thereof by converting, as we have seen elsewhere, for the purpose of defence, their marshy surroundings into water-sheets, through the construction of extensive causeways.⁸⁰ While the remnants of the original "tecpantlalli" and of the "tlatocatlalli" still remained visible in the gardens, represented to us as purely ornamental, which dotted the pueblo of Mexico,⁸¹ the substantial elements wherewith to fulfil a purpose for which they were no longer adequate had, in course of time, to be drawn from the mainland. But it was not feasible, from the nature of tribal condition, to extend thither by colonization. The soil was held there by other tribes, whom the Mexicans might well overpower and render tributary, but whom they could not incorporate, since the kinships composing these tribes could not be fused with their own. Outposts, however, were established on the shores, at the outlets of the dykes, at Tepeyacac on the north, at Iztapalapan, Mexicaltzinco, and at Huitzilopochco to the south, but these were only military positions, and beyond them the territory proper of the Mexicans never extended.⁸² *Tribute*, therefore, had to furnish the means for sustaining their governmental requirements in the matter of food, and the *tribute lands* had to be distributed and divided, so as to correspond minutely to the details of their home organization. For this reason we see, after the overthrow of the Tecpanecas, lands assigned apparently to the head war-chiefs, to the military chiefs of the quarters, "from which to derive some revenue, for their maintenance and that of their children."⁸³ These

⁸⁰ "Art of War" (pp. 150 and 151). L. H. Morgan ("Ancient Society," Part II, cap. VII. pp. 190 and 191).

⁸¹ Humboldt ("Essai politique sur la Nouvelle Espagne," vol. II, lib. III, cap. VIII, p. 50). Nearly all the old authors describe the public buildings as surrounded by pleasure-grounds, or ornamental gardens. It is very striking that, the pueblo having been founded in 1325, and nearly a century having been spent in adding sufficient artificial sod to the originally small solid expanse settled,—the Mexicans could have been ready so soon to establish purely decorative parks within an area, every inch of which was valuable to them for subsistence alone!

⁸² The Mexican tribe proper clustered exclusively within the pueblo of Tenuchtitlan. The settlements at Iztapalapan, Huitzilopochco and Mexicaltzinco were but military stations—outworks, guarding the issues of the causeways to the South. Tepeyacac (Guadalupe Hidalgo) was a similar position,—unimportant as to population,—in the North. Chapultepec was a sacred spot, not inhabited by any number of people, and only held by the Mexicans for burial purposes, and on account of the springs furnishing fresh water to their pueblo.

⁸³ Tezozomoc (Cap. XV, p. 24). See note 57.

tracts were but "official tracts," and they were apart from those reserved for the special use of the kinships. The latter may have furnished that *general* tribute which, although given nominally to the head war-chief still was, "for all the Mexicans in common."⁸⁴

The various classes of lands which we have mentioned were, as far as their tenure is concerned, included in the "calpulalli" or lands of the kinships. Since the kin, or "calpulli," was the unit of governmental organization, it also was the unit of *landed tenure*. Clavigero says: "The lands called altepetlalli, that is: those who belonged to the communities of the towns and villages, were divided into as many parts as there were quarters in a town, and each quarter held its own for itself, and without the least connection with the rest. Such lands could in no manner be alienated."⁸⁵ These "quarters" were the "Calpulli," hence it follows *that the consanguine groups held the "altepetlalli" or Soil of the tribe.*⁸⁶

We have, therefore, in Mexico, the identical mode of tenure of lands, which Polo de Ondogardo had noted in Peru and reported to the king of Spain as follows: ". . . . although the crops and other produce of these lands were devoted to the tribute, the land itself belonged to the people themselves. Hence a thing will be apparent which has not hitherto been properly understood. When any one wants land, it is considered sufficient if it can be shown that it belonged to the Inca or to the sun. But in this the Indians are treated with great injustice. For in those days they paid the tribute, and *the land was theirs.*"⁸⁷

The expanse held and occupied by the calpulli, and therefore called calpulalli," was possessed by the kin in *joint* tenure.⁸⁸ It

⁸⁴ Tezozomoc (Cap. X, p. 18). Zurita ("Rapport, etc.," p. 227). Herrera (Dec. III, lib. IV, cap. XVII, p. 138. "I no era en mano del Señor disponer de estos Tributos á su voluntad, porque se alteraba la Gente, i los Principales." This refers specially to the tribute by quarters "barrios.")

⁸⁵ *Storia del Messico* (Lib. VII, cap. XIV).

⁸⁶ Ixtlilxochitl ("Histoire des Chichim," Cap. XXXV, p. 242). Torquemada (Lib. XIV, cap. VII, p. 545).

⁸⁷ "Narratives of the Rites and Laws of the Yncas, translated from the original Spanish manuscripts, and edited by Clement R. Markham." Publication of the "Hakluyt Society," 1873. "Report of Polo de Ondegardo" who was "Regidor" of Cuzco, in 1560; and a very important authority (See Prescott, "History of the Conquest of Peru," note to Book I, cap. V). Confirmed by Garcia ("El Origen de los Indios," Lib. IV, cap. XVI, p. 162).

⁸⁸ Zurita ("Rapport, etc., etc., p. 50). "The chiefs of the second class are yet called Calpullec in the singular and Chinancaltec in the plural. (This is evidently incorrect, since the words "Calpulli" and "Chinancalli" can easily be distinguished from each other. "Chinancalli," however, after Molina means "cercado de seto" (Parte IIa, p.

could neither be alienated nor sold; in fact, there is no trace of barter or sale of land, previous to the conquest.⁸⁹ If, however, any calpulli weakened, through loss of numbers from any cause whatever, it might farm out its area to another similar group, deriving subsistence from the rent.⁹⁰ If the kinship died out, and its lands therefore became vacant, then they were either added to those of another whose share was not adequate for its wants, or they were distributed among all the remaining calpulli.⁹¹ The calpulli was

21), or an enclosed area, and if we connect it with the old original "chinamitl" we are forcibly carried back to the early times, when the Mexicans but dwelt on a few flakes of more or less solid ground. This is an additional evidence in favor of the views we have taken, of the growth of landed tenure among the Mexican tribe. We must never forget, that the term is "Nahuatl" and as such recognized by all the other tribes, outside of the Mexicans proper. The interpretation as "family" in the Q'Quiché tongue of Guatemala, which we have already mentioned, turns up here as of further importance), th. is chiefs of an old race or family, from the word Calpulli or Chinancalli, which is the same, and signifies a quarter (barrio), inhabited by a family known, or of old origin, which possesses since long time, a territory whose limits are known, and whose members are of the same lineage." "The calpullis, families or quarters, are very common in each province. Among the lands which were given to the chiefs of the second class, there were also calpullis. These lands are the property of the people in general ("de la masse du peuple") from the time the Indians reached this land. Each family or tribe received a portion of the soil for perpetual enjoyment. They also had the name of calpulli, and until now this property has been respected. They do not belong to each inhabitant of the village in particular, but to the calpulli, which possesses them in common." Don Ramirez de Fuenleal, letter dated Mexico, 3 Nov. 1532 ("Recueil de pièces, etc., Ternaux-Compans, p. 253). "There are very few people in the villages which have lands of their own . . . the lands are held in common and cultivated in common." Herrera (Dec. III, lib. IV, cap. XV, p. 135) confirms, in a condensed form, the statements of Zurita: "and they are not private lands of each one, but held in common." Torquemada (Lib. XIV, cap. VII, p. 545). Veytia (Lib. III, cap. VI, p. 196). "Finally there were other tracts of lands in each tribe, called calpulalli, which is, land of the calpules (barrios), which also were worked in common." Oviedo (Lib. XXXII, cap. LI, pp. 536 and 537). Clavigero (Lib. VII, cap. XIV). Bustamante ("Texcoco, etc.," Parte IIIa, cap. V, p. 232).

⁸⁹ Zurita (p. 52). "He who obtained them from the sovereign has not the right to dispose of them." Herrera (Dec. III, lib. IV, cap. XV, p. 135), "he who possessed them, could not alienate them, although he enjoyed their use for his lifetime." Torquemada (Lib. XIV, cap. VII, p. 545). Disputes about lands are frequently mentioned but they refer to the enjoyment and possession, and not the transfer of the land. Baron Humboldt ("Vues des Cordillères et monuments indigènes des peuples de l'Amérique," Vol. I, Tab. V), reproduces a Mexican painting representing a litigation about land. But this painting was made subsequent to the conquest, as the fact that the parties contending are Indians and Spaniards sufficiently asserts. Occasional mention is made that certain lands "could be sold." All such tracts, however, like the "pillali" have been shown by us to be held in communal tenure of the soil, their enjoyment alone being given to individuals and their families.

⁹⁰ Zurita (p. 13). "In case of need it was permitted to farm out the lands of a calpulli to the inhabitants of another quarter." Herrera (Dec. III, Lib. IV, cap. XV, p. 134). "They could be rented out to another lineage."

⁹¹ Zurita (p. 52). "When a family dies out, its lands revert to the calpulli, and the chief distributes them among such members of the quarter as are most in need of it."

a democratic organization. Its business lay in the hands of elective chiefs:—"old men," promoted to that dignity, as we intend to prove in a subsequent paper, for their merits and experience, and after severe religious ordeals. These chiefs formed the council of the kin or quarter, but their authority was not absolute since on all important occasions a general meeting of the kindred was convened.⁹² The council in turn selected an executive, the "calpullec" or "chinancallec" who, in war, officiated as "achcacauhtin" or "teachcauhtin" (elder brother).⁹³—This office was for life or during good behavior.⁹⁴ It was one of his duties to keep a reckoning of the soil of the calpulli, or "calpulalli," together with a record of its members, and of the areas assigned to each family,—and to note also whatever changes occurred in their distribution.⁹⁵ Such changes, if unimportant, might be made by him;

⁹² Zurita (pp. 60, 61, 62). Ramirez de Fuenleal ("Letter, etc." Ternaux-Compans, p. 249).

⁹³ Zurita (p. 60). "The calpulli have a chief taken necessarily from among the tribe, he must be one of the principal inhabitants, an able man who can assist and defend the people. The election takes place among them. . . . The office of this chief is not hereditary; when any one dies, they elect in his place the most respected old man. . . . If the deceased has left a son who is able the choice falls upon him, and a relative of the former incumbent is always preferred" (Id. pp. 50 and 222). Simancas M. S. 8. ("De Porre de succession, etc.," "Recueil," p. 225). "As to the mode of regulating the jurisdiction and election of the *alcaldes* and *regidores* of the villages, they nominated men of note who had the title of *achcacauhtin*. . . . There were no other elections of officers. . . ." "Art of War, etc." (pp. 119 and 120).

⁹⁴ Zurita (pp. 60 and 61). Herrera (Dec. III, Lib. IV, cap. XV, cap. 125). "I le eligian entre si y tenian por maior."

⁹⁵ Zurita (pp. 61 and 62). "This chief has charge of the lands of the calpulli. It is his duty to defend their possession. He keeps paintings showing the tracts, the names of their holders, the situation, the limits, the number of men tilling them, the wealth of private individuals, the designations of such as are vacant, of others that belong to the Spaniards, the date of donation, to whom and by whom they were given. These paintings he constantly renews, according to the changes occurring, and in this they are very skilful." It is singular that Motolinia, in his "Epistola proemial" ("Col. de Doc.," Icazbalceta, Vol. I, p. 5), among the five "books of paintings" which he says the Mexicans had, makes no mention of the above. Neither does he notice it in his letter dated Cholula 27 Aug., 1554 ("Recueil de pièces, etc.," Ternaux-Compans). Sahagun (Lib. VIII, cap. XV, p. 304) says, "porque primeramente demandaban la pintura en que estaban escritas ó pintadas las causas, como haciendas, casas, ó maizales" (Id. cap. XXV, p. 314). This tends to prove the existence of such paintings. Mendieta (Lib. II, cap. XXVII, p. 135). Torquemada (Lib. XIV, cap. VIII, p. 546), "and in order to prevent any confusion in these lands they painted them on long strips (*"lienzos"*) in the following manner. The lands of the calpules light yellow, those of the principals flesh-red, and the lands of the Kings income of a fiery red color,—so that, on opening one of these rolls, the entire pueblo, its limits and outlines could be seen at a glance." This is another confirmation of our views about the distribution of the soil, and the fact that the two latter classes had but different shades of red, is somewhat significant. See Clavigero (Lib. VII, cap. XIV), who confirms. The explanation of Zurita covers the whole ground, however, and explains both of the last statements.

more important ones, or contested cases, had to be referred to the council of the kinship, which in turn often appealed to a gathering of the entire quarter.⁹⁶

The "calpulalli" was divided into lots or arable beds, "tlalmilli."⁹⁷ These were assigned each to one of the married males of the kinship, to be worked by him for his use and that of his family. If one of these lots remained unimproved for the term of two consecutive years, it fell back to the quarter for redistribution. The same occurred if the family enjoying its possession removed from the calpulli. But it does not appear that the cultivation had always to be performed by the holders of the tract themselves. The fact of improvement under the name of a certain tenant was only required, to insure this tenant's rights.⁹⁸

Therefore the chiefs and their families, although they could not, from the nature of their duties, till the land themselves, still could remain entitled to their share of "tlalmilpa," as members of the calpulli. Such tracts were cultivated by others for their use. They were called by the specific name of "pillali" (lands of the chiefs or of the children, from "piltontli" boy, or "piltzintli,"

⁹⁶ Zurita ("Rapport, etc.," pp. 56 and 62). We quote him in preference, since no other author, known to us, has been so detailed.

⁹⁷ "tlalmilli" "tierras, & heredades de particulares, que estan juntas en alguna vega" (Molina, Part IIa, p. 124).

⁹⁸ Each family, represented by its male head, obtained a certain tract or lot for cultivation and use, Zurita (p. 55). "The party (member of the calpulli, because no member of another one, had the right to settle within the area of it. See Id. p. 53), who has no lands, applies to the chief of the calpulli who, upon the advice of the other old men, assigns to him such as correspond to his ability and wants. These lands go to his heirs" Id. (p. 56). "The proprietor who did not cultivate during two years, either through his own fault or through negligence, without just cause . . . he was called upon to improve them, and if he failed to do so, they were given to another the following year." Bustamante ("Tezcoco, etc.," Parte IIIa, p. 190, cap. I). The fact, that any holder of a "tlalmilli" might rent out his share, if he himself was occupied in a line precluding him from actual work on it, results from the lands of the "calpulli" being represented alternately treated as communal, and again as private lands. Besides, it is said of the traders who, from the nature of their occupation, were mostly absent, that they were also members and participants of a "calpulli" (Zurita, p. 233. Sahagun Lib. VIII, cap. III, p. 349). Now, as every Mexican belonged to a kinship, which held lands after the plan exposed above, it follows that such as were not able to work themselves, on account of their performing other duties subservient to the interests of the community, still preserved their tracts by having others to work them for their benefit. It was not the right of tenancy which authorizes the improvement, but the fact of improvement for a certain purpose and benefit, which secured the possession or tenancy.

child),⁹⁹ and those who cultivated them carried the appellation of "tlalmaitl"—hands of the soil.¹⁰⁰

The "tlalmilpa," whether held by chiefs or by ordinary members of the kin ("macehuales") were, therefore, the only tracts of land possessed for use by individuals in ancient Mexico. They were so far distinguished from the "tecpantlalli" and "tlatocatlalli" in their mode of tenure as, whereas the latter two were dependent

⁹⁹ It is just the "pillali" which oppose the greatest difficulties to this investigation, and to a clear conception of the mode of tenure of lands in ancient Mexico. They are generally represented (whenever mentioned), as private domains of the chiefs. Torquemada (Lib. XIV, pp. 545 and 546), distinguishes two kinds of "pillali." The first one he says might be sold,—but he places the restriction upon them, that such as held lands through conquest ("sujecion") or through gift ("merced") of the chief, had to go to the descendants, as majorat; and if they died without heirs, the King, or Lord became such, and they were incorporated into his royal Estates." The other kind was not transmissible at all. Clavigero (Lib. XVII, cap. XIV). We notice here a confusion between official tracts and such lots of the "calpulli" as pertained to the chief's family in consequence of their membership of the Kin. Also between "tribute-lots" and the official tracts, of conquered tribes. Torquemada acknowledges, that the "pillali," upon the death of the family, were incorporated in the calpulli to which that family belonged, "in order that they might pay tribute." This ought to define their true position and nature.

¹⁰⁰ From "tlalli" soil, and "maitl" hand. Hands of the soil. Molina (Parte Ila, p. 124), has: "tlalmaitl"—"labrador, ò gañan." This name is given in distinction of the "macehuales" or people working the soil in general. The tlalmaites are identical with the "mayeques." See Zurita (p. 231), "tlalmaites or mayeques, which signifies tillers of the soil of others . . ." He distinguishes them plainly from the "teccaltec" which are the "tecpanpouhque" or "tecpantlaca" formerly mentioned as attending to a class of official lands (p. 231, Zurita). Herrera (Dec. III, lib. IV, cap. XVII, p. 138). "These mayeques could not go from one tract to another, neither leave those which they cultivated, and they paid a rent to its masters according as they agreed upon ("en lo que se concertaban") in what they raised. They paid tribute to nobody else but the master of the land." This tends to show that there existed, not an established obligation, a serfdom, but a voluntary contract, that the "tlalmaites" were not serfs, but simply renters. Torquemada (Lib. XIV, cap. VII, p. 515), ". . . those that were knights ("caballeros") and descendants of the families of the Kings, and Lords, had their particular lands and their rentals, where many of them held renters ("terrazgueros") which served them, tilled the crops and served them in their houses. These lands were called pillali or "land of nobles and knights." We prefer the etymology "piltontli" "niño ò niña, muchacho ó muchacha" (Molina, II, p. 82), or "piltzintli" niño ó niña therefore lands of the children,—to the derivation from "pilli." The title of chief was "tecutli," and the word "pilli" substituted for it is certainly but in connection with the occupation of a particular place of office, and not a title itself. Bustamante ("Tezcoco, etc.," p. 330). "The sovereigns as well as the inferior Lords and other principals had their own patrimonial estates, and in them their mayeques or Tlalmayes, what these gave of rent were tributes of the Lord," Id. pp. 233 and 234).

The "tlalmaites" appear to have been free from other tributes, and free from communal labor outside of the "pillali" (Bustamante, p. 233. Herrera, Dec. III, lib. IV, cap. XVII, p. 138). It is not very clear, however, whether this applies simply to the conquering tribe alone, or also to the tlalmaites of conquered tribes, as towards the tribute due by that tribe to their conquerors. The detailed relations between the two are yet somewhat obscure and confuse in some points.

from a certain office, the incumbent of which changed at each election, the "tlamilli" was assigned to a certain family, and its possession, therefore, connected with *customs of inheritance*.¹⁰¹

Being thus led to investigate the customs of Inheritance of the ancient Mexicans, we have to premise here, that the personal effects of a deceased can be but slightly considered. The rule was in general, that whatever a man held, descended to his offspring.¹⁰² Among most of the northern Indians a larger cluster participated.¹⁰³ In conformity with the organization of Society based upon kin, when in the first stage of its development, the kindred group inherited, and the common ancestor of this kin being considered a female, it follows that if a man died, not his children, still less his wife, but his mother's descendants, that is: his brothers, sisters, in fact the entire consanguine relationship from which he derived on his mother's side, were his heirs.¹⁰⁴ Such may have been the case even among the Muysca of New-

¹⁰¹ Ramírez de Fuenleal ("Letter," see "Recueil. etc.," p. 253). "De l'ordre de succession, etc., etc." Simancas MSS. (Id. p. 224). Herrera (Dec. III. lib. IV, cap. XVII, p. 138). Torquemada (Lib. XIV, cap. VII, p. 545). Clavigero (Lib. VII, cap. XIV). These authors mention only the "pillali" but Motolinia (Trat. II, cap. V, pp. 120 and 121), and Gomara (Vedia I, p. 434), apply it in general, and the latter is even very positive about the tributaries ("los pecheros.") Also Zurita (p. 56), although contradictory on p. 51).

¹⁰² Motolinia (Tratado II, cap. V, p. 120), "but they left their houses and lands to their children . . ." Gomara (p. 434). "Es costumbre de pecheros que el hijo mayor herede al padre en toda la hacienda raíz y mueble, y que tenga y mantenga todos los hermanos y sobrinos, con tal que hagan ellos lo que el les mandare." Clavigero (Lib. VII, cap. XIII). "In Mexico and nearly the entire realm, the royal family excepted as already told, the sons succeeded to the father's rights,—and if there were no sons, then the brothers, and the brothers sons inherited." Bustamante ("Tezcoco, etc.," p. 219). In all these cases, Bustamante only speaks of chiefs; but the quotations from Motolinia and Gomara directly apply to the people in general.

¹⁰³ Mr. L. H. Morgan has investigated the customs of inheritance, not only among the northern Indians, but also among the pueblo Indians of New Mexico. He establishes the fact, that the "kinship" or "Gens," which we may justly consider as the unit of organization in American Aboriginal Society, participated in the property of the deceased. He proves it among the Iroquois ("Ancient Society," Part II, cap. II, pp. 75 and 76). Wyandottes, Id. cap. VII, p. 153. Missouri-tribes, p. 155. Winnebagoes, p. 157. Mandans, p. 158. Minnitarees, p. 159. Creeks, p. 161. Choctas, p. 162. Chickasas, p. 163. Ojibwas, p. 167; also Potowattomies and Crees, Miami, p. 168. Shawnees, p. 169. Sauks, Foxes and Menomines, p. 170. Delawares, p. 172. Munsees and Mohogans, p. 173. Finally, the pueblo Indians of New Mexico are shown to have, if not the identical at least a similar mode of inheritance. It would be easy to secure further evidence, from South America also.

¹⁰⁴ "Ancient Society" (Part II, cap. II, p. 75. Part IV, cap. I, pp. 538, 530, 531, 536 and 537).

Granada.¹⁰⁵ It was different, however, in Mexico, where we meet with traces of a decided progress. Not only had descent been changed to the male line,¹⁰⁶ but heirship was limited, to the exclusion of the kin and of the agnates themselves, to the children of the male sex.¹⁰⁷ Whatever personal effects a father left, which were not offered up in sacrifice at the ceremonies of his funeral,¹⁰⁸ they were distributed among his male offsprings, and if there were none, they went to his brothers. Females held nothing whatever, beyond their wearing apparel and some few ornaments for personal use.

The "tlalmilli" itself, at the demise of a father, went to his oldest son, with the obligation to improve it for the benefit of the entire family until the other children had been disposed of by marriage.¹⁰⁹ But the other males could apply to the chief of the calpulli for a "tlalmilli" of their own:¹¹⁰ the females went with

¹⁰⁵ Gomara ("Historia de las Indias," Vedia I, p. 201). Garcia ("Origen de los Indios," Lib. IV, cap. 23, p. 247). Piedrahita (Parte 1, lib. I, cap. 6, p. 27). Joaquin Acosta ("Compendio historico del Descubrimiento y Colonizacion de la Nueva-Granada," Cap. XI, p. 201). Ternaux-Compans ("L'ancien Cundinamarca," pp. 21 and 38).

¹⁰⁶ Motolinia (Trat. II, cap. V, p. 120). Gomara (p. 434). Clavigero (Lib. VII, cap. XIII). Zurita (pp. 13 and 43).

¹⁰⁷ Letter of Motolinia and Diego d'Olarte, to Don Luis de Velasco, Cholula, 27 Aug., 1554 ("Recueil, etc., etc.," p. 407). "The daughters did not inherit, it was the principal, wife's son . . ." Besides, nearly every author designates but a son, or sons,—as the heirs. There is no mention made of daughters at all. In Tlaxcallan, it is also expressly mentioned that the daughters did not inherit (Torquemada, Lib. XI, cap. XXII, p. 348). In general, the position of woman in ancient Mexico was a very inferior one, and but little above that which it occupies among Indians in general. (Compare the description of Gomara, p. 440. Vedia I, with those of Sahagun. Lib. X, cap. I, p. 1; cap. XIII, pp. 30, 31, 32 and 33. The fact is generally conceded). H. H. Bancroft, "Native Races," Vol. II, Cap. VI, p. 224, etc.

¹⁰⁸ Motolinia (Trat. II, cap. V, p. 120). Torquemada (Lib. XIII, cap. XLII to XLVIII, pp. 515 to 529). Acosta (Lib. V, cap. VIII, pp. 320, 321 and 322). Gomara (pp. 436 and 437. Vedia, I). Mendieta (Lib. II, cap. XL, pp. 162 and 163). Clavigero (Lib. VI, cap. XXXIX. "They burnt the clothes, arrows, and a portion of the household utensils")

¹⁰⁹ Motolinia (Trat. II, cap. V, p. 120), "el cual hacer de testamento no se acostumbraba en esta tierra, sino que dejaban las casas y heredades a sus hijos, y el mayor, si era hombre, lo poseia y tenia cuidado de sus hermanos y hermanas, y yendo los hermanos creciendo y casándose, el hermano mayor partia con ellos segun tenia; y si los hijos eran por casar, entrábanse en la hacienda los mismos hermanos, digo en las heredades, y de ellas mantenian a sus sobrinos y de la otra hacienda." Gomara ("Conq. de Méjico," p. 434). "It is customary among tributary classes that the oldest son shall inherit the father's property, real and personal, and shall maintain and support all the brothers and nephews, provided they do what he commands them. The reason why they do not partition the estates is in order not to decrease it through such a partition" Simancas M. S. S. ("Recueil, etc., etc.," p. 224). "Relative to the calpulli . . . the sons mostly inherit."

¹¹⁰ Zurita (p. 55). "He who has no land applies to the chief of the tribe (calpulli), who, upon the advice of the other old men, assigns to him a tract suitable for his wants, and corresponding to his abilities and to his strength." Herrera (Dec. III, lib. IV, cap. XV, p. 135).

their husbands. Single-blessedness, among the Mexicans, appears to have occurred only in case of religious vows, and in which case they fell back for subsistence, upon the part allotted to worship, or in case of great infirmities, for which the *calpulli* provided.¹¹¹ No mention is made of the widow participating in the products of the "*tlalmilli*," still it is presumable that she was one of those whom the oldest son had to support. There are indications that the widow could remarry, in which case her husband, of course, provided for her.¹¹²

The customs of Inheritance, as above reported, were the same with chiefs as well as with the ordinary members of the tribe. Of the personal effects very little remained since, the higher the office was which the deceased had held, the more display was made at his cremation, and consequently the more of his dresses, weapons and ornaments, were burnt with the body.¹¹³ Of lands, the chiefs only held each their "*tlalmilli*" in the usual way, as members of their kin, whereas the other "official" lots went to the new incumbents of the offices. It should always be borne in mind, that none of these offices were hereditary themselves. Still, a certain "right of succession" is generally admitted as having existed. Thus, with the Tezcucans, the office of head war-chief might pass from father to son,¹¹⁴ at Mexico from brother to brother, and from uncle to nephew.¹¹⁵ This might, eventually, have tended to *perpetuate* the

¹¹¹ Such unmarried females were the "nuns" frequently mentioned by the old writers. We shall have occasion to investigate the point in our paper on "the ancient Mexican priesthood." As attendants to worship, they participated in the tributes furnished towards it by each *calpulli*, of which we have spoken.

¹¹² Oviedo ("Hist. gen. y nat. de Indias," Lib. XXXIII, cap. LIV, pp. 347-333), reports a conversation with Don Juan Cano, held at San Domingo, 8 of Sept., 1514, in which the said Cano asserts that he married Montezuma's daughter, widow of *Quauhtemotzin*. There is an indefinite report that, when she married *Quauhtemotzin*, she was already the widow of *Cuiclahuatzin*. Intermarriage of widowers and widows took place in Yucatan, but without any ceremony. See Landa, "Relacion de las cosas de Yucatan." Paris, 1825, by Mr. Brasseur de Bourbourg, p. 142, §XXV.

¹¹³ See note No. 108, the same quotations apply to this case. Besides, we refer to the numerous descriptions of funeral rites, or rather cremations, contained, for instance, in Durán, Tezozomoc, Ixtlilxochitl, Veytia, and in Bustamantes "Tezcoco en los Ultimos Tiempos, etc." Also to the cremation of the head chief of Michhuacan, as related by Mendieta (Lib. II, cap. XLI, pp. 164-167). We abstain from special quotations, the subject being amply discussed in all the authors just mentioned.

¹¹⁴ Zurita (p. 12). Gomara (Vedia I, p. 434). Torquemada (Lib. IX, cap. IV, p. 177. Lib. XI, cap. 27, p. 336, etc. etc.).

¹¹⁵ This fact is too amply proven to need special references. We reserve it for final discussion in our proposed paper on the chiefs of the Mexicans, and the duties, powers and functions of their office.

office in the *family*, and with it also the possession of certain lands, attached to that officer's functions and duties. But it is quite certain too that this stage of development had not yet been reached by any of the tribes of Mexico at the time of its conquest by the Spaniards. The principal idea had not yet been developed, namely, that of the *domain*, which, in eastern countries at least, gradually segregated into individually hereditary tenures and ownerships.

There was consequently, at the time when the Spaniards first came into contact with the Mexican aborigines, no established feudal system among the Indians of Mexico. Based exclusively upon kin, aboriginal society then presented to the first Europeans who witnessed it a strange and partly dazzling, partly repulsive; at all events a bewildering, aspect. It is not devoid of interest, and it is even important for us to consider what were the effects of this contact of a people imbued with the principles of medieval feudality with tribes still adhering to far more primitive ideas, upon the latter's mode of tenure and distribution of their lands.

The ostensible basis, on which the Spaniards established a claim to any parts of America whatever, is expressed in the Bull of Pope Alexander VI, executed at Rome on the fourth day of May, 1493. By this act of the Holy See the kings of Spain (Ferdinand and Isabella), in consideration of their devotion to the Catholic religion, and of their zeal in propagating the Christian faith even over the remotest parts of the earth's surface, are made and created absolute possessors, for themselves, their heirs and successors, of all the lands already discovered and still to discover by them or their agents in the new world. The conditions accompanying this grant were that they "manage to send to the said mainlands and islands good men, fearing God, learned, well taught and expert, for to instruct their aforesaid inhabitants and natives in the Catholic faith, and to teach them good manners, with all due diligence."¹¹⁶ This title, although it partakes of the nature of a

¹¹⁶ Martín Fernandez de Navarrete ("Colección de los Viajes y Descubrimientos que hicieron por mar los Españoles desde Fines del Siglo XV," Madrid, 1825. Tom. II, pp. 23-33). "Et insupre mandamus vobis in virtute sanctae obediencie, est (sicut pollicemini et non dubitamus pro vestra maxima devotione et Regia magnanimitate vos esse facturos) ad terras firmas et insulas praedictas viros probos, et Deum timentes, doctos, peritos et expertos ad instruendam incolas et habitatores praefatos in Fide Catholica, et in bonis moribus imbuendam destinare debeat, omnium debitam diligentiam in praemissis adhibentes." Mendieta ("Hist. Eccles. Ind.," Lib. I, cap. III, pp. 20 and 22). Herrera (Dec. I, lib. II, cap. IV, p. 41). Gomara ("Historia de las Indias," Vedia I, pp. 168 and 169). Oviedo (Lib. II, cap. VIII).

fief, still virtually created,—what his subsequently became in Spanish America,—a *domain* of the Spanish crown. Armed with it, and fully convinced of its validity,¹¹⁷ the Spaniards regarded at once the soil of Mexico as their king's own, and therefore claimed the right as his agents, to dispose of it through distribution according to their home-laws and customs. But, instead of proclaiming this title at once after the landing, as was done on many other points of the American coast,¹¹⁸ Cortés found it advisable to delay such a formal declaration until after he had, by his own inspection, satisfied himself of the proper ways and means to secure possession. He quickly found out the disconnected state of the country, although he attributed it to causes which were not really existing,¹¹⁹ and it is well known how he improved it for his plans. He therefore treated secretly, as much as possible, with members of tribes subjected (or rather tributary) to the Mexicans and their confederates,¹²⁰ and in consideration of their espousing the Spanish cause, he promised them sundry favors.¹²¹ The oldest document issued by Europeans on Mexican soil embodies such a negotiation with chiefs of the tribes of Axapusco and Tepeyahualco, both pueblos being situated within the valley of Mexico itself.¹²² It promises

¹¹⁷ Herrera (Dec. I, lib. II, cap. IV, p. 41). Oviedo (Lib. II, cap. VIII, pp. 31 and 32). Gomara (Vedia I, p. 168). Mendieta (Lib. I, cap. III, pp. 18-20), and many others. All these authorities can be summed up in Robertson's classical words: "The Pope, as vicar and representative of Jesus Christ, was supposed to have a right of dominion over all the kingdoms of the earth" ("History of America," 8th Edition, 1800. Vol. I, Book II, p. 159). It appears that already Grijalva had, in 1518, taken possession formally of the Mexican coast. (Oviedo, Lib. XVII, cap. XV, p. 525)

¹¹⁸ Herrera (Dec. I, lib. VII, cap. XIV, pp. 197 and 198). Robertson (Vol. I, Book III, p. 271; also note XXIII, p. 378).

¹¹⁹ Cortés supposed a Mexican state or empire and his measures were taken in consequence. ("Carta Segunda," Vedia I, p. 12). Gomara ("Conq. de Méjico," p. 313). Bernal-Diez del Castillo ("Hist. verd. de la conq. de N. España," Vedia II, pp. 32 and 33). Oviedo (Lib. XXXIII, cap. II, p. 251). Torquemada (Lib. IV, cap. XVI, pp. 366 and 367), etc. etc.

¹²⁰ Cortés ("Carta Segunda," Vedia I, pp. 13 and 15). Bernal-Diez (Vedia II, cap. XII, p. 36). Oviedo (Lib. XXXIII, cap. II, p. 261). Andrés de Tapia ("Col. de Documentos," of Icazbalceta, Vol. II, pp. 561 and 562). Gomara ("Conq. de Méjico," Vedia, I, p. 320). But the main evidence is furnished by the document published by Icazbalceta in his second volume of the "Colección de Documentos para la Historia de Mexico," in the 2d volume, and entitled: "Real Ejecutoria de S. M. Sobre Tierras y Reservas de Pechos y Paga, perteneciente á los Caciques de Axapusco, de la Jurisdicción de Otumba" (pp. 5, 6, 7, 8 and 9).

¹²¹ "Real Ejecutoria" (Col. de doc. II, p. 7). Gomara (Vedia I, p. 320). Clavigero (Lib. VIII, cap. XI).

¹²² The pueblos of Axapusco and Tepeyahualco are situated along the road leading from the city of Mexico to Tullauzinco, in the state of Mexico proper, northwest of San Juan de Teotihuacan. As the Document to which we have already referred im-

to those chiefs lands of their own. The grantees had no conception of the true import of what they accepted, neither did Cortés conceive the nature of *their* ideas. It was the object of the Indians

plies, they were under Spanish rule included in the jurisdiction of Otumba. This document itself requires particular attention. It has been published by Sr. Icazbalceta in the second volume of his documentary collections, and its authenticity has been carefully examined—and, we think, successfully proven—by Sr. José F. Ramirez. Its history is not devoid of interest, and we record it here, partly from the document itself, and partly from the introduction and notes by the late Sr. Ramirez.

On the 9th day of March, 1617, there appeared before the viceroy of New Spain (Marques de Guadalcázar), Leonardo de Salazar "in the name of the governor, alcalde and fiscals" of the pueblo of San Esteban Axapusco and Santiago Tepeyahualco, "of the jurisdiction of Otumba," praying for a confirmation in writing by the viceroy, of a certain grant made by Cortés, and approved by the King and his royal council under seal,—to the aforesaid pueblos. In order to obtain said confirmation it was alleged: that the grant, written on "nine leaves" was so torn and damaged, that it would no longer bear handling,—and that through its loss the inhabitants of said settlements might come to grief. The petition was immediately granted and it was ordained, on the 19 of March 1617, that a copy of the original grant should be executed, and that in such places where the text was torn or obliterated through damage to the originals, common belief or tradition should prevail as far as it related to the contents of the document ("obre la fe que hubiere lugar en derecho"). The desired copy and certificates were accordingly issued on the 21st day of March, 1617.

This copy embodies the mutilated text of a very singular official paper. It appears from it that on the 20th day of May 1519, Cortés executed, in favor of two Indian chiefs of the two aforesaid pueblos, and at their request, a certificate (signed by himself at San Juan de Ulúa on that day and countersigned: Pedro Hernandez), stating that the said chiefs had joined the messenger sent from Mexico to greet and espy Cortés upon his arrival at the coast,—with the intention of approaching him secretly and offering him their assistance in any designs he might have against the Mexicans, whom they said held them severely to tribute. This they achieved, and took allegiance to the crown of Spain. In return Cortés promised to them that "after our journey should be accomplished . . . to them should in the first place be made the greatest honor possible in return for so much noble subtility and good-will." He also promised "to make them *grandees* and *Lords* of lands where they now have their pueblos." The facts thus alleged were contained in the original document, written consequently about 30 days after the landing of Cortés on the coast of Vera Cruz. But this act itself was included, as a copy, in a further grant, dated 16 December, 1526, in which Cortés acknowledges the services rendered by the two chiefs during the conquest of Mexico, and that after that pueblo had been captured, the said chiefs returned to their tribes "well paid with the booty," relying upon the fulfillment of his original promises. It further states that: six years having elapsed since, and to most of the chiefs who had assisted the Spanish cause, lands had been given, he remembered the chiefs of Axapusco and Tepeyahualco, "and by these presents in the royal name of His majesty gave them four tracts ("*cuatro sitios de estancia*") . . . in the territory of their said pueblos." These lands were freed from all taxes and impositions, and the chiefs and their heirs were invested forever with the lordship and the office of governors ("*gobernadores*") of the pueblo to which they belonged. This grant of Cortés was confirmed by the Emperor Charles V. and the royal council of the Indies, 2d November, 1537, and on the 9 and 10 February, 1540, the said chieftains were duly installed in their new hereditary positions, and their lands measured off to them.

Doubts were raised as to the genuineness of the document, but these are set aside completely by the fact that, not more than 98 years after its first execution, the Spanish authorities have legally acknowledged it. Some objections relating to imperfections in the text, apparent anachronisms, have been eliminated through the judicious

merely to become free of tribute to the Mexicans, as they had been previously; but no thought entered their mind, at that time, of ownership of the soil.¹²³ This earliest transaction (probably 20th of May, 1519) was in itself a perfect revolution, or at least the initiatory step thereto. Unbeknown to themselves, these Indians became feudatories to the crown of Spain, and thus the first germ was planted, which, in its development, subverted gradually the aboriginal order of things in Mexico.¹²⁴

Every tribe, which subsequently surrendered to the Spaniards, bowed in the same manner to the new principle introduced. The Indians did not realize it, and as the idea of territorial domain was unknown to them, they could not see the construction placed upon their submission by the European invaders. It was not possible for them to feel or know that, if the council of a tribe agreed to accept the Spaniards in place of their former Mexican conquerors, their *territory* thereby might become alienated. On the other hand the Spaniards, not understanding the principles of Indian organization, completely misunderstood the nature of the contract. They took it for granted, that the tribal government had power and authority over the tribal soil.

When at last Montezuma and such chiefs as were with him, from Mexico as well as from Tezcucó and Tlacopan, being then

notes of Sr. Ramírez, as well as by the careful and thorough treatment of the editor, Sr. Icazbalceta. We cannot refrain from accepting the "Real Ejecutoria" as genuine and from calling the reader's attention to it, as one of the most important documents on the subject of ancient Mexican tenure of the soil. For the purpose of this note, we exclusively dwell on its *authenticity*, reserving the other points concerned for subsequent annotations; two items excepted which we must mention here, namely: It results from the grant of Cortés:

- (1). That the chiefs of Axapusco and Tepeyahualco held no lands as their own property, until Cortés granted such to them.
- (2). That their offices were *not hereditary*, until Cortés established them as such; through his aforesaid grant. The two conclusions just stated are of great importance for the subject of this paper, and they should be kept present in mind, since we shall have occasion to make further use of the document.

¹²³ "Real Ejecutoria, etc., etc." ("Col. de Docum." Vol. II, p. 6). Andrés de Tápia ("Col. de Doc." II, p. 561, etc.). Cortés ("Carta Segunda," Vedia, I, pp. 12 and 13). Gomara ("Conq. de Méjico," Vedia I, p. 318. Very explicit and positive). Oviedo (Lib. XXXIII, cap. II, pp. 261, 262 and 263). Bernal-Díaz ("Hist. verdadera, etc." Vedia II, cap. XLVI and XLVII). Ixtlixochitl ("Hist. des Chichim.", cap. LXXX, pp. 173, 174 and 175). Torquemada (Lib. IV, cap. XX, pp. 397, 398 and 399). Clavigero (Lib. VIII, cap. IX and XI). Robertson ("History of America," Vol. II, Book V, p. 286). (Prescott Book II, cap. VII).

¹²⁴ "Real Ejecutoria, etc." ("Col. de Doc." II, p. 6, "y que desde agora en adelante y para siempre se ofrecian fieles y leales vassallos de su majestad d' emperador . . ." p. 7, "y me suplicaron les diese testimonio de la obediencia que dieron a Dios nuestro Señor y a S. M.")

in Spanish power, consented to the ceremonies required for their "swearing allegiance" to Spain, Cortés thenceforth regarded the annexation of Mexico to the domains of his liege lord as complete.¹²⁵ Montezuma was hereafter considered as a feudatory of the Spanish crown, and it became the duty of that crown's other dependents to protect him. Consequently, when the Mexicans took up arms against their obnoxious guests, they became, in the eyes of the latter, rebels against what was assumed to be their legitimate lord, Montezuma, and, he in turn having been converted into a vassal of Spain, rebels also towards that power itself.¹²⁶ This act of rebellion entailed for those participating in it, forfeiture of life and property, at the option of their conquerors. Thus a further title was created for the Spaniards, to seize even lands used or held by individuals, outside of what they believed to be public or lordly domains, and a theoretical right was construed to be a complete and violent revolution.

After the pueblo of Mexico had fallen, the first step of Cortés in regard to the Indians was, therefore, to establish the system of "Repartimientos."¹²⁷ This mode had come into existence during the life-time of Columbus, through a Patent dated 22d of July, 1497, authorizing the great admiral to distribute lands in the West Indian Islands among the Spanish settlers for their own use and exclusive ownership.¹²⁸ No mention is made, in these letters patent, of the aboriginal occupants of the soil, but Columbus, in a later act of *his own*, decided that the Indians should work such lands for the benefit of those to whom he had given them "and thus" says Herrera, "the Repartimientos or Encomiendas all over the Indies originated."¹²⁹ The Indians on such tracts became serfs to their Span-

¹²⁵ Cortés ("Carta Segunda," Vedia I, p. 30). Bernal-Diez (Cap. CI, Vedia II, p. 103). Oviedo (Lib. XXXIII, cap. IX).

¹²⁶ The term "rebellion" is frequently applied to the uprising of the Mexicans during Cortés' short absence on his expedition against Narvaez, and their subsequent resistance to Spanish power. In fact, it appears so frequently in documents and chronicles of the 16th century, that we may well refrain from special quotations.

¹²⁷ Cortés ("Carta Cuarta," Vedia I, pp. 113, 114, 115 and 116). Bernal-Diez (Vedia II, Cap. CLXIX, pp. 237 and 238). Gomara (Vedia I, p. 384). Letter of the troops of Cortés to the Emperor ("Col. de Doc.," I, p. 431). It is also acknowledged by Cortés himself in his letter of 13 October, 1524, to the Emperor, wherein he expressly states ("Col. de Doc.," I, pp. 473 and 473), that he dared not promulgate the late-4 despatches received by him from the Spanish court, since these enjoined him to abstain from "repartir ni encomendar." Thus he acknowledges having already made "repartimientos."

¹²⁸ Nivarrete ("Coleccion de Viajes, etc." Tom. II, pp. 215 and 216). Herrera (Dec. I, lib. III, cap. II, p. 86).

¹²⁹ Herrera (Dec. I, lib. III, cap. XVI, p. 95). Oviedo (Lib. III, cap. VI, p. 72).

ish conquerors, they could not, at least in later times, be separated from the soil on which they dwelt.¹³⁰

The country of Mexico being very extensive, while the number of the original Spanish conquerors was comparatively small, it followed that, sometimes at least, large areas inhabited by entire tribes, or at least by entire kinships, fell to the lot of a single man. The new owner in such cases found an organized community established upon his grant, and he usually preferred not to disturb this organization, contenting himself with exacting for his individual benefit a tribute levied in a manner approximate to that which had been customary previous to the conquest.¹³¹ Nevertheless, several disturbing influences soon appeared.

The first one was the construction placed upon the obligation of personal labor to be performed by the Indians. It was gradually so extended, that instead of remaining confined to the *land*, it attached to the *person* of the new owner, and thus tended, by admitting forcible displacement, to disrupt the ties of kinship, which formed the basis of the tenure of lands.¹³²

In the second place the Spaniards looked upon all tracts set apart by the Indians for governmental purposes, as public domain of the Mexicans, and so, wherever a tribe had resisted their invasion, such official lands were of course regarded as forfeited. They became either property of the crown, or were assigned to some one of the early Spanish immigrants. We have already seen that these lots, although their crops were destined to special uses, were properly communal soil. This mode of tenure was now suddenly abolished, and the principle of *private* or *public ownership* established

¹³⁰ Herrera (Dec. I, lib. III, cap. XVI, p. 95). Oviedo (Lib. III, cap. VI, p. 72). Mendieta (Lib. I, cap. VI, pp. 32 and 33).

¹³¹ Letter of Ramirez de Fuenleal, Bishop of San Domingo ("Recueil, etc.," p. 244). Letter of the Licentiate Ceynos ("Col. de Doc.," Vol. II, pp. 162 and 163). Letter of Ramirez de Fuenleal ("Col. de Doc.," Vol. II, pp. 170, 171 and 172, etc., etc.). Letter of Father Domingo de Betanzos ("Col. de Doc.," II, pp. 190-197). Bernal-Diez (Cap. CCX, p. 313. Vedia II).

¹³² That the original intention was merely to have the Indians work the soil for the benefit of the Spanish owners, is proved by Herrera (Dec. I, lib. III, cap. XVI, p. 95), and by Oviedo (Lib. III, cap. VI, p. 72). The latter was a contemporary. But it results, principally from the complaints about the ill treatments of the Indians, and the suggestions for remedy,—that the Spaniards very soon converted this position into one of personal slavery. See Letter of Ramirez de Fuenleal, of 1532 ("Col. de Doc.," II, pp. 167 and 168), of Alonso del Castillo (Col. II, p. 202). Opinion of the Licentiate Marcos de Aguilar, 8 Oct., 1526 ("Col. de Doc.," II, pp. 513 and 516). Joint letter to the Emperor, of 9 Franciscan and Dominican monks ("Col. de Doc.," pp. 549-553). Letter of Motolinia ("Col. de Doc.," Vol. I), 2 Jan., 1535.

in its place. It is not surprising therefore, to find in the "Libro del Cabildo," or book of the municipality of the young city of Mexico, between the years 1524 and 1529, numerous entries recording the petitions of Spaniards for sites occupied, according to their belief, by private dwellings of Mexican chiefs, and the grants issued in consequence thereof.¹³³ This applied not only to the "lands of the houses of the community" (tecpan-tlalli), and "lands of the speakers" (tlatoca-tlalli), but especially to the "pillali" or lots assigned to each chieftain as member of a particular quarter. In this manner the soil of the consanguine group, the basis of landed tenure in Mexico, was directly invaded; portions of it being torn from its original connection.

Lastly the Spaniards, finding Indian communities too strongly and permanently organized for a sudden and violent reform, acceded to their maintenance as far as they understood it. But, fully convinced that the chiefs were monarchical or despotic rulers — masters of the soil as well as of its inhabitants,— wherever these chiefs had been personally friendly to them or wherever they regarded it as politic, they confirmed what they conceived to be *their prerogatives*.¹³⁴ Thus, regarding them as *owners* of the different classes of official lots, this ownership was formally recognized, and it was acknowledged that they were "lawfully seized in fee thereof." The "tlalmaites" became in law the vassals of those whom they formerly but considered as elective functionaries.

Not content with this, and in order to reward certain chiefs for services rendered during the conquest or good behavior afterwards, the Spanish conquerors also issued to them "Repartimientos, or gave them lands, sometimes unoccupied wastes, as their *own pri-*

¹³³ Humboldt ("Essai politique sur la Nouvelle Espagne," Vol. II, lib. III, cap. VIII, pp. 64 and 65).

¹³⁴ Letter of Father Toribio de Paredes (Motolinia) 2 Jan'y, 1555 (Col. de Doc. I), and especially the long letter of Mendieta, dated Toluca, 1st day of the year 1562 ("Col. de Doc." II). "Sixth: it appears to me that the native and legitimate Lords should be taken into account I treat of the particular Lords, touching their lordship of their Indians and pueblos, which they formerly possessed. For I think that some are expelled, and I do not know even if they were not reduced to macehuals and tributaries, and others, although some trifle is given to them it is in the shape of a governorship and in such a manner that, once despoiled from it, they are left destitute" ("se quedan á buenas noches") (p. 538). The good father here represents the true conceptions of the Europeans about the Indian chieftaincy (as a feudal lordship) at the time of the conquest. Also; Letter of the Archbishop of Mexico, Fray Alonzo de Montufar, dated 30 Nov., 1554. ("Cruautés horribles des conquérants du Mexique" Ternaux-Compans, pp. 258, 259 and 260, appendix.)

vate property.¹³⁵ Among these is to be classed the grant already mentioned to the caciques of Axapusco and Tepeyahualco.¹³⁶

The documents partaking of the nature of "Repartimientos" contain among their number a donation by Cortés to Doña Isabel Montezuma, daughter of the former Mexican "Tlaca-tecutli," which is very interesting for the purposes of this investigation. It is dated 26 of June, 1526, and gives to the grantee, in consideration of the aid lent to Cortés by her father, *the entire territory of the Tecpanecan tribe, at the same time acknowledging that it belonged to her by right "as patrimonial estate."*¹³⁷ We know, however, that the Tecpanecas formed the third member of the

¹³⁵ "Real Ejecutoria, etc." ("Col. de Doc." Vol. II, p. 20). Grant of Cortés to Doña Isabel Montezuma (Prescott, "Hist. of the Conquest of Mexico," Vol. III, Appendix, pp. 460, 461, 462, 463 and 464). Petition addressed to Charles V, by several Mexican chiefs in 1533 (Appendix to "Crnautes horribles des conquérants du Mexique" Ternaux-Compane, p. 261).

¹³⁶ It says: ("Real Ejecutoria, etc., etc." Col. de Doc. II, p. 18, "and since they were such (faithful) servants of H. M., they should be freed, together with their pueblos, from all impositions and contributions forever, and to them should be given four tracts of land ("estancias de tierras"), and they should become perpetual governors of their tribes, and none of their inferiors should ever obtain the office" p. 21. The King and his council of the Indies consequently ordained "by these presents we declare the aforesaid to be free and discharged ("quitos"), not bound to tributes, tenths, premisses and other duties or contributions customary or yet to be introduced, and that they and their descendants shall perpetually hold the government of their pueblos, with all the advantages and appurtenances to the four tracts, as Lords thereof, and that it is our pleasure and will. . . ." Lastly, in describing the lands surveyed for the said caciques it says: "and they are rough timbered lands, without any water, of which the aforesaid took possession" p. 24). This shows that certain tracts were set off from the communal soil, to become private property of the chiefs. It is interesting to connect therewith the following statement by Zurita (p. 57). "These lands belonging to the calpullis, it was unjust to give them to the Spaniards, as it is still done. The latter seeing uncultivated lands, demand them from the persons who govern."

¹³⁷ This grant has fortunately been published by Mr. Prescott, in the Appendix to the "History of the Conquest of Mexico" (Vol. III, pp. 461-464). It bears the title: "Privilegio de Doña Isabel Montezuma, Hija del gran Moteczuma último Rey Indio del gran Reyno y Ciudad de México, que bautizada y siendo Christiana casò con Alonso Grado, natural de la villa de Alcantara, Hidalgo, y criado de su Magestad, que habia servido y servia en muchos officios de aquel Reyno. Otorgado por Don Hernando Cortes, conquistador del dicho Reyno, etc., etc." Its date is 26 June, 1526. The Doña Isabel is mentioned as "the principal and legitimate heiress of the said Lord Moteczuma," and the concession itself is worded as follows: "con la qual dicha Doña Isabel le prometo y doi en dote y araaas à la dicha Doña Isabel y sus descendientes, en nombre de S. M. y como su governador y capitán general destas partes, y porque de derecho le pertenece de su patrimonio y legitima, el Señoria y naturales del Pueblo de Tacuba, etc., etc." The following pueblos are added: Yeteve, Yzquil-Luca, Chimalpan, Chapulmaloyan, Escapuliteango, Xiloango, Ocolacaque, Castepeque, Talanco, Gatscrio, Duotepeque, Tacala. Notwithstanding the defective orthography (Escapulitango in place of Azcaputzalco, Duotepeque instead of Ometepen, etc.) we easily discern the territory of the Tecpanecan tribe; a fact still further proven by the own words of the grant: "the aforesaid settlements and pueblos are subjected to the pueblo of Tacuba and to its Lord."

"Nahuatl" confederacy of the valley of Mexico, that they and their soil were totally independent from the Mexicans.¹³⁸ Still, Cortés honestly assumed it to have been a part of the Mexican domain, and on this assumption based his disposition of it, fully convinced that he was performing an act of honest restitution. This gives a measure of the erroneous ideas then prevailing among the Spaniards on the mode of tenure and distribution of lands in ancient Mexico.

Thus a state of things was inaugurated which could not fail, eventually, to create the most unfortunate results. The Indians among themselves were placed on very unequal footings. In some sections the calpulli, even the whole tribe, were left undisturbed, in others their lands were assigned to Spanish individuals. Again, certain tracts were taken away from the communal soil, and became private property of individual conquerors. But the most disastrous influence certainly was exercised by the assignment of landed property to individual Indians. It created an inequality of condition in each and every aboriginal community against which those least favored revolted, whereas the preferred ones, now combining authority with landed property, were tempted to abuse their new position.¹³⁹ Of this division and strife among the

¹³⁸ In addition to the testimony already adduced, we refer here to the Letter of Fray Toribio (Motolinia) and Fray Diego d' Olarte, dated Cholula 27 Aug., 1554. "All the others obeyed to Montezuma, to the sovereign of Tezcuco, and to him of Tacuba. These three princes were closely confederated; they divided among themselves the lands (countries) which they conquered." (*"Recueil de pièces, etc.,"* p. 403.) In the "Relation of the services rendered by the Marquis of the Valley (Cortés)," executed between 1532 and 1535 — and presented to the Emperor by the Licentiate Nuñez, reference is made to the original grant to Cortés, of lands containing: "23,000 vassals" which territory included the Tecpanecan pueblos of Cuyucan and Atacubaya. These pueblos were claimed "through the intrigues of the president Nuño de Guzman and of the auditors Matienzo and Delgadillo" as belonging to Mexico, but the case was tried in New Spain, and Cortés furnished ample proof "how the said lands are distinct, in limits and jurisdiction, from the city of Mexico, and that the Lords of Cuyucan and Atacubaya always possessed them peaceably and in fact" (*"Col. de Doc.,"* Vol. II, p. 56). If now this was the fact with those two villages, how much more so was it with Tacuba and its surroundings, which were the chief places of the Tecpanecan tribe; as third member of the Nahuatl confederacy of the Mexican valley.

¹³⁹ The grant to Cortés mentioned in the preceding note, is an instance of the agglomeration of several pueblos under a single owner. There must have been many more: since he created originally but 200 "Repartimientos" over the whole territory. The Licentiate Ceynos, in his letter of 22 June, 1532 (*"Col. de Doc.,"* Vol. II, p. 150), mentions "until 400 persons" of which 200 had to settle in the city of Mexico. The Bishop Fuenleal in his "Opinion" of 1532 (*"Col. de Doc.,"* II, p. 170), mentions (among others) the following Repartimientos: "Huexotzinco to Diego de Ordáz." The province of

Aborigines themselves the Spaniards naturally profited for further encroachments. Many "encomenderos" used the authority of the chiefs to turn their Indian serfs into actual slaves, others in turn improved the new perspective opened to the natives towards the acquisition of private lands, for the purpose of undermining the influence and authority of the chieftains.¹⁴⁰ Frequently, also, the ignorance in which the Indians were, as to the

Tepeaca to Pedro Armildez Chirino,—Chilchota to Juan de Sámano, etc., etc. Each of these, especially the first one, comprised several villages, nay a whole tribe.

Compare the letter of the Archbishop Montufar, 30 Nov., 1554 ("Cruautés horribles, etc." Appendix. 255-260). Zurita (pp. 63 and 64). The complaints are principally, against such as held offices under the conquerors, and such to whom lands were given out of the *capitulalli*. The petition of Montufar is a terrible accusation against the Indian chiefs. Gomara, however, qualifies it as one of the good effects of the conquest that the Indians since that time "hold lands" (*Vedia I*). Motolinia (*Trat. I*, cap. I, p. 17) is very severe on the collectors of rent for the whites. But these collectors must have been mostly Indians,—*chiefs*, as he himself acknowledges in his Cholula-letters.

¹⁴⁰ Motolinia (*Trat. I*, cap. I, p. 17). Montufar (pp. 255-260). Zurita (pp. 63 and 64). Ceynos, Second Letter, 1 March, 1565 (*Col. de Doc. II*, pp. 240 and 241). Zurita (p. 83) is of special importance, exposing the intrigues of the Spanish conquerors among the Indian communities, inciting the natives to litigations against their chiefs. Mendieta, in his remarkable letter from Toluca, 1 Jan'y, 1562, to Fray Francisco de Bustamante, commissary general, at Mexico, devotes his principal attention to the pernicious influence of the Spanish interpreters and lawyers, inciting the Indians to litigation before the "Audiencia" and not before the viceroy. He says for inst. (p. 532), "that without comparison their condition and behavior was better at their time of gentility than now. For at the time they were heathens they did not know of lawyers ("letrado" properly men of letters), scribes, nor attorneys, neither of litigations, nor to spend in such (squabbles) their properties and ruin their souls. To-day, since the opportunity is afforded to them, and they being naturally quarrelsome, disposed to tackle and injure each other, they are so fond of it as to have them continually on hand, without cause nor reason, and (such are) always the worst and most abject of the tribe. Therefore not a single community is found in New Spain which is not disturbed, and does not spend nearly as much in litigation as they pay of tribute to H. M., or to the encomendero every year. And since they are of little understanding, and not versed in law, I hold all what the interpreters and attorneys gain by it as so much of a robbery as if they would take it from the houses at night. Such do not even deny their base actions, but confess openly that they do it, without any other excuse than that H. M. gives them permission." On p. 536, he says: "certain particular Indians in all the settlements do great mischief, knowing that they have recourse to the court, and among the pretences to cover their malice they use two most commonly, which are: demand account of the communal property, pretending that the principals spend it, and the other, to have the conduct of their officers investigated under color that these abuse of their position (power)." Zurita (p. 83), speaking of the intrigues against the chiefs says: "the ordinary tribute and prestations falling, they fall into the most abject misery, become dejected, dare not speak, and do not know where to apply for protection. For all this the rebels do not cause any loss to the encomendero as to his tribute . . . In this manner they ruin the chiefs in a very short time, for all their property consists in the work of their vassals, as soon as that ceases, if it was but for a single day, they lack every requisite for life." (This quotation is in itself, we think, the most ample confirmation of what we have advanced upon the subject of aboriginal tenure of the soil, and fully disproves what has been assumed in regard to the chiefs holding and owning lands of their own). See also Memorial of Bartolomé de Las Casas (*Col. de Doc. II*, pp. 229 and 230).

real import and value of landed concessions, was taken advantage of to deprive them of such subsequently, either through litigation or through barter for worthless trifles.¹⁴¹ Unacquainted with the new order of things suddenly forced upon them, unable therefore to profit by it for subsistence, the natives of Mexico could not help being *degraded* instead of *elevated* and bettered in condition by such a transition which displaced them, in the course of a few years, from a state of tribal and communal society into one of civilization.¹⁴²

Consequently a state of disorganization began to prevail, which threatened to ruin the country. At the same time, however, while the Indians, forlorn in the maze of difficulties in which their conquerors themselves also floundered about, were in a perfectly helpless condition, a sudden protection and relief arose to them. On the 13th of May, 1524, "one day previous to the vigils of Pentecost," there landed at San Juan de Ulúa, a cluster of twelve Franciscan friars, sent to Mexico in response to the original call of Cortés, for the purpose of converting the Indians.¹⁴³ These monks

¹⁴¹ Zurita (pp. 63 and 64). Mendieta (Letter, in Col. de Doc. II).

¹⁴² The Europeans opened a wide field for activity. They were superior to the Mexican aborigines, not only in organization, but especially in mechanical arts and inventions for the purpose of subsistence. It was now required of the Indians to suddenly take hold of all these improvements, which it had taken the Europeans centuries upon centuries to secure through long experimenting,—and to become familiar with them in a short time, as well as to feel happy and contented at once under a state of society which tore asunder all those ties of kinship forming, since time immemorial, the basis of their organization. It was asking too much of them altogether, and if besides what was asked was even enforced violently,—then the degrading consequences could not be avoided. Therefore, the most ardent advocates of the Indian cause took great care to insist upon letting the natives alone in their communities; even prohibiting the access thereto to the Spanish colonists. Bartolomé de las Casas, in his joint memorial with Fray Domingo de Santa Tomás, in favor of the Indians of Peru, written about 1500 ("Col. de Doc." Bibliographical notes, p. XLII,) says: "Lo segundo, que porque los Españoles son siempre del bien de los indios contrarios, y en especial lo son y han de ser impedidores de aqueste negocio y concierto, que han de estorbar por cuantas vias pudieren que los indios no paguen a S. M. ni puedan pagar este servicio; por tanto es necesario que se prohiba que ningún comendero entre por ninguna causa ni rason en los pueblos de los indios que tienen encomendados, ni sus mujeres, que son las mas crueles y perniciosas, ni negro, ni criado, ni otra persona suya (p. 233)." Alonzo de Zurita, in his memorial written at Mexico between 1534 and 1564 ("Col. de Doc." II, p. XLVII), insists strongly upon keeping the Indians apart from the Whites (p. 335). In regard to the actual degradation, see Mendieta's letter, of 1 Jan'y, 1593 ("Col. de Doc." II, p. 539). Motolinia ("Hist. de los Indios de N. España," Trat. I, cap. I).

¹⁴³ The Franciscan friars obtained their first concession from Pope Leo X, by a bull dated 25 April, 1521 (Mendieta, lib. III, cap. V, pp. 188-190). This bull was executed in favor of Fray Francisco de Quñones (de los Angeles), and Fray Juan Clapion. But these fathers never reached Mexico. Previous to it, three Flemish missionaries, Fray Juan de Tecto, Fray Juan de Aora, and Fray Pedro of Ghent had gone to New Spain

fully realized what was asked of them, but they went still further by becoming, not only the spiritual advisers, but actually the material protectors, of the aborigines. Basing upon the authority conferred by the Pontiff at Rome, they publicly denounced, not only the individual acts of the Spaniards, but even those of the royal officers.¹⁴⁴ This could not fail to incite the Indians to resistance, and when the conquerors resorted to violence, not only did the oppressed find refuge and protection in the newly erected convents, but one of the most distinguished Franciscans, Fray Toribio, of Benavent (Motolinia), even notified the agents of the royal "audiencia,"—who had come to Huexotzinco to seize the fugitives and bring them to justice,—to leave the settlement forthwith, threatening, in case of non-compliance, with excommunication.¹⁴⁵

The protection thus afforded would have been far more efficacious, had the good Friars understood at that time the true nature of Indian land tenure, and their usages with respect to the distribution of the soil. They might then have accompanied their violent protests with a rational remedy. Restoration of the ancient customs, limiting the Indian clusters to their territories actually tilled, without disturbing their original organization, would have been the proper way. Alongside of such communities, ample room would have remained for the settlements of whites, and the unavoidable contact between both races would have changed slowly and more permanently the condition of the natives, lifting them up gradually to the practical appreciation of ideas of civilization. But

of their own accord, and without Papal sanction. But, while Fray Pedro de Gante, for instance, rendered valuable service to science through one of his letters, it is among the "twelve apostles of Mexico" that we find those who have equally combined heroism in protecting the Indians, with due regard to the conservation of their memories and historical traditions. These "twelve" were: Fray Martin de Valencia, Fray Francisco de Soto, Fray Martin de Coruña, Fr. Juan Xuares, Fray Antonio de Ciudad Rodrigo, Fr. Toribio of Benavente, Fr. García de Cisneros, Fr. Luis de Fuensalida, Fr. Juan de Ribas, Fr. Francisco Ximenez, Fr. Andrés de Córdoba, Fray Juan de Palos (Mendieta, lib. III, cap. X, also cap. XI, etc.). We shall have further occasion to use their writings, therefore this humble tribute of gratitude to their memories.

¹⁴⁴ Compare the beautiful introduction to Motolinia's "*Historia de los Indios de Nueva-España*," by Sr. José F. Ramirez, in Sr. Icazbalceta's "*Col. de Documentos*" (Vol. I, Introd. p. XLVII to p. I), which quotes an act of Gonzalo de Salazar, 28 July, 1525 (contained in the first "*Libro de Cabildo*" of Mexico), containing a complaint, against the Franciscan friars for "meddling with matters of civil jurisdiction and government." See also the report of Herrera about the convention ("*Junta*") at Barcelona, in Spain in 1529 (Dec. IV, lib. VI, cap. XI, p. 118, etc.).

¹⁴⁵ Introduction to Motolinia ("*Col. de Doc.*," Vol. I, p. L). Torquemada (Lib. XV, cap. XXII, pp. 66, 67-69).

even in their letter to the emperor, dated 1st of September, 1526,¹⁴⁶ the "apostles of Mexico" insisted upon a thorough establishment of what Mr. Prescott so justly calls the "vicious" system of *Repartimientos*, representing that an immediate and thorough intermingling of both races alone could promote the interests of conversion.¹⁴⁷

Still, an improvement in the system gradually took place. The civil and criminal jurisdiction over the natives, which formerly had been vested in each landholder,¹⁴⁸ was placed in the hands of special officers of the crown. It was directed that the owner should reside on his property, that the Indians could not be separated from the soil and finally, on the 20th of November, 1542, the "new laws and ordinances for the government of the Indies" were promulgated, which contained such restrictions upon the "*Repartimientos*," that their further extension and increase was rendered impossible, and the number of those existing, greatly limited. The Indians themselves were declared direct vassals to the crown of Spain.¹⁴⁹

Although in many parts of Spanish America these laws were but "obeyed though not executed,"¹⁵⁰ they still called forth a

¹⁴⁶ "Col. de Documentos" (Vol. II, pp. 155, 156 and 157). Joint letter of Franciscan and Dominican monks (p. 549, etc.).

¹⁴⁷ "Col. de Doc." II, pp. 155-157, 549, etc.; also letter of Fray Domingo de Betanzos (pp. 190-197). Notwithstanding the agreement between Franciscan and Dominican monks on that point, Las Casas continued to protest in the most vehement manner, against the "*Repartimiento*." See his memorial, jointly with Fray Domingo de Santo Tomás (Col. II, pp. 231-236), and to the council of the Indies, of 1502 or 1503 (Col. II, pp. 595-598), in which he says: "Thirdly, that the *encomiendas* or *repartimientos* of Indians are iniquitous, *per se* wrong, therefore tyrannical, and such administration is tyrannical also. Fourth, that such as give them commit a mortal sin, like those who maintain them, and if they do not give them up, they cannot be saved."

¹⁴⁸ It was customary for each "*encomendero*" to exercise civil and criminal jurisdiction within his "*Repartimiento*."

¹⁴⁹ "Nuevas Leyes y Ordenanzas para la Gobernacion de las Indias" (Col. de Doc., II, pp. 204-237), dated Valladolid (Spain), 4 June, 1543, promulgated at Mexico, 24 March, 1544. Herrera (Dec. VII, lib. VI, cap. V, pp. 110-113). These new laws were the cause of bloody disturbances in Spanish America. Gomara (Vedia I, pp. 249 and 250).

¹⁵⁰ "Se obedeeo, pero no se cumple." There are many evidences of this saying having been put in actual practice. Joaquin Acosta ("*Compendio historico del Descubrimiento y de la Colonizacion de Nueva Granada*," 1848, cap. XVII, p. 316). At the arrival of the Licentiate Armendariz in Cauca, sent to enforce the new laws, Belalcázar at once had them promulgated, but took the responsibility of forthwith also suspending their execution. He wrote to the King from Cali, in 1544, in regard to his action. Acosta says: "Entonces comenzó en el nuevo mundo Español á campear la formula *irrisoria de se obedeeo, pero no se cumple*; con que se eludían las ordenes que no les convenia ejecutar á los funcionarios de aquellas apartados comarcas." Herrera (Dec. VII, lib. VII, cap. XXIII, pp. 157 and 158).

marked improvement, at least in the personal condition of the Indians. They were, hereafter, at least to some extent, protected from the bodily slavery in which the former acts had plunged them. In regard to the tenure of lands, however, the laws wrought no change. Further direct spoliations became more difficult, but the new principle of private ownership had been firmly implanted, not merely *around* but *among* the natives themselves, and the obliteration of the ancient usages, by the extension of this principle, could not be stayed.

Of the aboriginal mode of tenure of lands and of their distribution, but one vestige remained—the last monument so to say, and the one which embodies, happily, all its principal features. These are the lands of *kinship*, held in common by the consanguine group or *calpulli*, and called as we have seen, “*calpulalli*,” by the Mexicans.

Although their order had been very much disturbed since in many cases the official tracts, “*tecpan-tlalli*” and “*tlatoca-tlalli*,” as well as those apportioned to the chiefs as members of the kin, “*tlalmilli*,” were appropriated by the conquerors,—the bulk of the “*calpulalli*” could not, for a long time, be disintegrated for private uses, notwithstanding the still more nefarious influence exercised by the donation of lands to individuals, with the faculty of barter or sale, in the very heart of the organization itself. Even up to the present time, these communal tracts are still found in Mexico, occupied and tilled by the aborigines after their original customs.¹⁵¹

¹⁵¹ Mr. James Pascoe, an English gentleman, resident of Toluca, has in a letter reported upon by the French “*Journal des Missions Évangéliques*” (1874), given a detailed description of the condition of the Indians in his vicinity. His statements about their communal system of tenure, the eligibility of their chiefs, etc., etc. (“*gobernadores*”) are very positive and plain.

Mr. Stephens, in “*Travels in Yucatan*” (Vol. II, cap. I, pp. 14 and 15), described the mode of life of the settlement (“*rancho*”) of Schawill near Nohcacab, which settlement contained about “one hundred *labradores*, or working men, their lands are held and worked in common, and the products are shared by all. Their food is prepared at one hut, and every family sends for its portion, etc., etc.”

Brantz-Mayer: (“*Mexico as it was and as it is*,” 3d Edition, 1817). While at the hacienda of Temisco near Cuernavaca: “he pointed out to us the site of an Indian village, at the distance of three leagues, the inhabitants of which are almost in their native state. He told us, that they do not permit the visits of white people; and that, numbering more than three thousand, they come out in delegations to work at the haciendas, being governed at home by their own magistrates, administering their own lands, and employing a Catholic priest to shrive them of their sins; once a year. The money they receive in payment of wages, at the haciendas, is taken home and buried; and as they produce the cotton and skin for their dresses, and the corn and beans for their food, they purchase nothing at the stores” (p. 175). Hon. E. G. Squier, in his ex-

At a late hour, comparatively, the government of Spain recognized the importance of maintaining this last vestige of Indian land tenure. It was brought to it, not only by the incessant clamor of ecclesiastics of various orders,¹⁵² by the necessity of restraining the power of the new settlers over the aborigines, which power threatened (as in Peru) to endanger Spanish domination itself,¹⁵³—but especially from the conviction, that it was best suited to the wants of the Mexican natives, being the mode of

cellent work on Nicaragua, makes the following very important observations on the tenure of lands there: (Vol. I, cap. 200 and 201). "The municipality of Subtiaba, in common with the *barrios* of some of the towns, holds lands, as I have said, in virtue of royal grants, in its corporate capacity. These lands are inalienable, and are leased to the inhabitants at low and almost nominal rates. Every citizen is entitled to a sufficient quantity to enable him to support himself and his family; for which he pays from four *rials* (half a dollar), to two dollars a year. This practice seems to have been of aboriginal institution; for under the ancient Indian organization, the right to live was recognized as a fundamental principle in the civil and social system. No man was supposed to be entitled to more land than was necessary to his support; nor was he permitted to hold more than that, to the exclusion or injury of others. In fact, many of the institutions of the Indians in this country were recognized, and have been perpetuated by the Spaniards." The bearings of these remarks, upon our subject, are easily noticed, and need no further comments. That part of the indigenous population of which the learned traveller treats, are from the same stock as the Mexicans.

The document which has already occupied our attention, namely: the grant of Cortés to the chiefs of Axapusco and Tepeyahualco (See note 136) also furnishes evidence of the existence of these communal tracts in Mexico, and their recognition by the Spanish government. This grant was the object or cause of a long suit, which we shall refer to hereafter,—the inhabitants of the two *pueblos* suing their chiefs for restitution of the communal property. This shows that the "*calpulli*" in fact, if not in name perhaps, still existed at least in the past century. The litigation alluded to occurred between the years 1753 and 1764.

¹⁵² These protestations were mainly issued at the example of the indefatigable Las Casas. It would be superfluous to refer to them in detail. But it is remarkable with what freedom of language this violent though noble character was permitted to speak. We have already quoted (note 147), his memorial to the council of the Indies (written in 1592 or 1593). In that document he goes so far as to say: "First, that all the wars called conquests ("*conquistas*" applying it to the New World exclusively), were and are unjust and the very acts of tyrants. Second, that all the Kingdoms and Lordships of the Indies are held by us through usurpation only Fifth: that the King our Lord, whom God may keep safe and prosperous, cannot, with all the power God has given him, justify the wars and robberies made to these people, nor the *Repartimientos* and *encomiendas*,—more than he could justify the wars and robberies committed against the Christian by the Turks Eighth: that the natives of all these parts and wherever we may have entered the Indies have a perfect right to make war upon us or to expel us and wipe us off the face of the earth, which right they will preserve until the day of judgment" (Col. de Doc. II, p. 338). This is strong talk from the Bishop of Chiapas, not only against the Emperor, but against the Holy See, which had donated the Indies to Spain.

¹⁵³ It is well known that the liberation of the Indians from personal servitude was a measure, not only of humanity and justice, but also of policy, on the part of the Spanish government, to weaken the growing power of the conquerors and early colonists. The troubles in Peru give a good example of the state of affairs.

tenure of lands corresponding to undisturbed aboriginal society. Thus the calpulli were, to a limited extent, protected, nay fostered, and recognized in law, even as late as the past century.¹⁵⁴ Like all remains of "ancient society," they also are bound to disappear, or be transformed in a manner suitable to the exigencies of a higher culture. But it may not be amiss to quote, at the close of this investigation, a tribute paid to their value for the wants of Indian society by Alonzo de Zurita, a Spanish official of perspicacity, deep knowledge, and honest judgment, in his memorial to the King of Spain, written about the year 1560.¹⁵⁵

¹⁵⁴ The litigation over the grant to the caciques of Axapusco and Tepeyahualco, to which we referred in note 151,— is commented upon as follows by Señore J. F. Ramirez in his letter proving the authenticity of the document, dated 30 Sept., 1853, and printed in the Introduction to the "Real Ejecutoria, etc., etc." "D. Juan de los Santos, D. Antonio Estéban, D. Juan and D. Lorenzo Morales, with the title of caciques and principals of Tepeyahualco, and with the right of successors and lawful descendants of D. Juan and D. Fernando Morales "companions (they said), of the illustrious Hernan Cortés in the conquest and pacification of these kingdoms" had been in possession of the municipal government of that pueblo and of Axapusco, and consequently of the administration of their communal property. The dexterous policy of the Spanish government soon conceived the danger of that system, which was very general in its origin, and therefore sought to undermine it in its own particular way. It sought, therefore, to develop the municipal (communal) principle of institutions, and setting the democratic element to action, thus placed the caciques in opposition with their former subordinates, destroying their influence and power. In the present case, the viceroy authorized the pueblos mentioned to elect their municipal authorities, and thereby Santos and the Morales were removed from the administration of the properties." These remarks are very important. But the parties appealed from this division and a long suit ensued. The chiefs based their claims upon the grant of Cortés exclusively (pp. XIII and XIV), and the pueblos attacked the authenticity of that document; at the same time invoking the rights of possession ("plenario de posesion.") The result of the litigation is described as follows: "declaring the possession in favor of the pueblos, condemning Santos to restitution of the fruits (proceeds), but leaving aside the rights of the parties upon the point of ownership" (juicio de propiedad). The whole case shows that the Spanish government recognized:

First: The communal organization of the tribes, and the elective constituency of its chieftains.

Second: That the hereditary office of chiefs, and the hereditary ownership of lands, were Spanish innovations ("que á su principio fué muy ordinario"). Now this origin ("principio") is certainly not intended to go farther back than the conquest.

Third: That the only right and title, as claimed by the chiefs, was derived from the grant of Cortés, and that they did not claim any prior right, connected with decendancy or with privilege of caste.

Fourth: Consequently, that the Spanish government itself recognized the anterior democratic constituency of the Indian community, and its customs, regarding them as prevailing even over the acts and disposition of Cortés,— although to him the Spaniards owed the conquest of the country.

¹⁵⁵ Rapport sur les différentes classes de chefs de la Nouvelle Espagne," pp. 63 and 64. The original of this highly important report to the King of Spain, has been printed once, but very defectively, in the "Coleccion de Documentos Inéditos relativos al Descubrimiento, etc., etc." It is much to be regretted that my learned friend, Sr. Icazbalceta, has not incorporated that copy of it pertaining to Sr. Ramirez, in his valuable

"The good order reigning in the *calpullis* is a strong reason to protect them in law, and to prevent them from becoming intermingled, as they are already nearly everywhere; for once broken up, the harmony which they originally exhibited can never be reëstablished again. The ignorance about these institutions, and the little regard paid to them, are the cause that many Indians were given lands out of their *calpullis*, which they (originally) had received only to cultivate, and (this) on their simple assertion that they and their ancestors had held and tilled them. In doing this, they but follow the advice of the Spaniards (*mestizoes*) and *mulattoes*, who involve them in litigations, and who live from these squabbles. . . . In vain the chiefs deny such assertions, claiming that the lands belong to the *calpulli*; they are not heeded, the rightful owners are despoiled, and those to whom they are adjudged do not profit by it, since they sell them, or alienate them (otherwise) to the detriment of the *calpulli*."

Out of the scanty remains thus left of certain features of aboriginal life in ancient Mexico, as well as out of the conflicting statements about that country's early history, we have now attempted to reconstruct the conceptions of the Mexican aborigines about tenure of lands, as well as their manner of distribution thereof. Our inquiries seem to justify the following conclusions:

1. The notion of abstract ownership of the soil, either by a nation or state, or by the head of its government, or by individuals, was unknown to the ancient Mexicans.

2. Definite possessory right was vested in the kinships com-

"Coleccion de Documentos para la Historia de México."—Alonso de Zurita lived in America from 1540 till 1560; or about nineteen years. Of these he spent two at St. Domingo, three years in N. Granada, St. Marta, Cartagena, and the Cabo de la Vela, three years in Guatemala, and about eleven in Mexico. His "Report" consists of a series of answers to queries put by the King, and sent from Valladolid, Dec., 1553. If we could obtain all the answers given to these questions from all parts of Spanish America, and all as elaborate and truthful as those of Zurita, Palacio and Ondogardo, our knowledge of aboriginal history and ethnology of Spanish America would be much advanced.

posing the tribe ; but the idea of sale, barter, or conveyance or alienation of such by the kin had not been conceived.

3. Individuals, whatever might be their position or office, without any exception, held but the right to use certain defined lots for their sustenance, which right, although hereditary in the male line, was nevertheless limited to the conditions of residence within the area held by the kin, and of cultivation either by or in the name of him to whom the said lots were assigned.

4. No possessory rights to land were attached to any office or chieftaincy. As members of a kin, each chief had the use of a certain lot, which he could rent or farm to others, for his benefit.

5. For the requirements of tribal business, and of the governmental features of the kinships (public hospitality included), certain tracts were set apart as official lands, out of which the official households were supplied and sustained ; but these lands and their products were totally independent from the persons or families of the chiefs themselves.

6. Conquest of any tribe by the Mexicans was not followed by an annexation of that tribe's territory, nor by an apportionment of its soil among the conquerors. Tribute was exacted, and, for the purpose of raising that tribute (in part), special tracts were set off; the crops of which were gathered for the storehouses of Mexico.

7. Consequently, as our previous investigation (of the warlike institutions and customs of the ancient Mexicans) have disproved the generally received notion of a military despotism prevailing among them,—so the results of this review of Tenure and distribution of lands tend to establish : “that the principle and institution of feudality did not exist in aboriginal Mexico.”

REPORT OF THE TREASURER.

REPORT OF THE TREASURER.

*To the Trustees of the Peabody Museum of American Archaeology and
Ethnology in connection with Harvard University:*

The Treasurer respectfully presents his Eleventh Annual Report in the following abstract of accounts, and the cash account hereto annexed:—

The Collection Fund is charged with

9 Massachusetts 5 per cent. Const Defence Specie Notes, due July 1, 1883, each for \$5,000, numbered 48 to 54, registered, the gift of George Peabody, Esq.		\$45,000 00
Balance of Worcester & Nashua R. R. Co. Note of July 5, 1875, at 6 per cent.	\$7,065 28	
Note of Worcester & Nashua R. R. Co. of July 5, 1876, at 5 per ct.	1,691 89	
Note of Worcester Gas Light Co., Note, Jan. 4, 1876, at 6 per ct.	1,300 00	
Note of Worcester Gas Light Co., Note, Jan. 15, 1876, at 6 per ct.	600 00	
Balance in the hands of the Treasurer	1,789 38	
		13,346 55
Income from Mass. 5 per cent. Specie Notes in currency	2,337 89	
Income from Mass. 5 per cent. Specie Notes of Professor Fund in currency	2,337 88	
		4,675 77
Sale of Reports		8 13
Income from Treasurer's Investments		631 90
		<u>\$63,692 34</u>

And Collection Fund is credited with

9 Mass. 5 per cent. Specie Notes, as above, each for \$5,000		\$45,000 00
Balance of Worcester & Nashua R. R. Co. Note, July 5, 1875, at 6 per cent.	\$7,485 28	
Note of Worcester Gas Light Co., Jan. 4, 1876, at 5 per cent.	1,300 00	
Note of Worcester Gas Light Co., Jan. 15, 1876, at 5 per cent.	600 00	
Cash in the hands of the Treasurer	1,699 14	
		11,031 42
Payment for Explorations and Collections	2,061 70	
Payment to Dr. Edward Palmer, on account of appropriation for Explorations in Mexico	500 00	
Payment to F. W. Putnam, Curator, on account of Explorations in Tennessee	200 00	
Payment to F. W. Putnam, Curator, on account of Plates for Report	200 00	
		3,961 70
Payment to F. W. Putnam, Curator, one year's salary	1,800 00	
Payment to Harvard College, for Rent of Rooms	750 00	
Payment for Rent of Deposit Safe	30 00	
Payment for Books	62 50	
Payment for printing Report and other printing	854 90	
Payment for Incidental Expenses	1,181 82	
		4,669 22
		<u>\$63,692 34</u>

The Professor Fund consists of

9 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 55 to 63, registered, the gift of George Peabody, Esq.; the income appropriated to Collection Fund, until Professorship is filled	\$45,000 00
--	-------------

The Building Fund is charged with

12 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 64 to 75, registered, the gift of George Peabody, Esq.	\$60,000 00
7 Bonds of Worcester & Nashua R. R. Co., at 7 per cent., due April 1, 1883	\$11,000 00
42 Shares of State N. Bank, Boston, cost	6,040 00
5 Bonds of Boston, Barre & Gardner R. R. Corporation, each \$5,000, 7 per cent., cost	4,675 00
Balance in the hands of the Treasurer	322 60
	21,037 60
Income from Mass. 5 per cent. Specie Notes, in currency	3,117 19
Income from Investments by the Treasurer	1,594 29
	4,711 48
	<u>\$85,749 08</u>

And Building Fund is credited with

12 Mass. 5 per cent. Specie Notes, as above, each for \$5,000 . . .	\$60,000 00
Cash in the hands of the Treasurer	1,654 48
Payments for the erection of the Building	23,886 92
Payment for Incidentals	207 68
	24,094 60
	<u>\$85,749 08</u>

Mr. Peabody's Gift of \$150,000 in Mass. 5 per cent. Specie Notes remains unchanged, except in the Registration of the Notes. The use of this Fund appears in the Eleven Annual Reports, as follows:—

The Expenditures are

For Explorations and Collections	\$30,527 35
For Salary and Incidentals	20,469 79
For Erection of the Building	52,746 92
For Incidentals of the Building	207 68

And there is now Invested.

For Collection Fund, at par	56,031 42
For Professor's Fund, at par	45,000 00
For Building Fund, at par	81,654 48
	162,685 90
	<u>\$266,077 64</u>
\$150,000, and an annual income of 7 per cent., in 11 years will amount to	\$265,500 00

STEPHEN SALISBURY, *Treasurer.*

CAMBRIDGE, February 18, 1878.

Dr.

STEPHEN SALISBURY, *Treasurer of the Peabody Museum of American Archaeology and*

1877.		For Collection Fund.		
Jan.	17.	To Balance of Account		\$1,789 38
July	3.	To rec'd of F. W. Putnam, credit for payment, May 10		100 00
July	5.	To rec'd 6 months' Interest on Balance of Worcester & Nashua R. R. Note of July 5, 1875, 6 per cent. . .	238 96	
July	5.	To rec'd 6 months' Interest on Worcester & Nashua R. R. Co. Note of July 5, 1876, 5 per cent.	42 39	
				281 35
July	6.	To rec'd 6 months' Interest on Worcester Gas Light Co. Note, to 1st, 6 per cent. (5 per cent. after) . .	39 00	
July	6.	To rec'd 6 months' Interest on Worcester Gas Light Co. Note, to 1st, 6 per cent. (5 per cent. after) . .	18 00	
				57 00
July	7.	To rec'd 6 months' Interest on Mass. Specie 5 per cent. Notes to 1st, \$1.125, Gold, at 5½ per cent. . .	1,184 06	
July	7.	To rec'd six months' Interest on Mass. Specie 5 per cent. Prof. Fund Notes, to 1st, \$1.125, Gold, at 5½ per cent.	1,184 06	
				2,368 12
Aug.	18.	To rec'd for Worcester & Nashua R. R. Co. Note, July 5, 1876, \$1,691 89, Interest 5 per cent., \$10 35 . .		1,702 24
Oct.	5.	To rec'd of F. W. Putnam, credit for payment, July 31	400 00	
Oct.	5.	To rec'd of F. W. Putnam, Curator, for Reports sold	8 12	
				408 12
Nov.	26.	To rec'd of Dr. Edward Palmer, credit for payment, August 24		300 00
Nov.	28.	To rec'd on part of Worcester & Nashua R. R. Co. Note of July 5, 1875		500 00
1878.				
Jan.	3.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes to 1st inst., \$1.125, Gold, at 2 9-16 per cent.	1,153 83	
Jan.	3.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes of Professor Fund, to 1st, \$1.125, Gold, at 2 9-16 per cent.	1,153 82	
				2,307 65
Jan.	7.	To rec'd 6 months' Interest on Worcester Gas Light Co. Note, to 1st, at 5 per cent.	32 50	
Jan.	7.	To received 6 months' Interest on Worcester Gas Light Co. Note, to 1st, at 5 per cent.	15 00	
				47 50
Jan.	17.	To rec'd Interest to 5th inst., on Balance Worcester & Nashua R. R. Co. Note of July 5, 1875		235 80

Carried forward

\$10,097 06

Cr.

Ethnology in connection with Harvard University, in Annual Cash Account, Jan. 22, 1878.

1877.

Jan. 19.	By paid Dr. Edward Palmer, on account of Explorations in Utah, \$100; Post Orders, 50 cents	\$100 50
Jan. 30.	By paid Dr. Edward Palmer, on account of Explorations in Utah, \$100; Post Orders, 50 cents	100 50
Feb. 3.	By paid Rent of Safe Deposit	30 00
Feb. 5.	By paid Harvard College, Rent of Rooms, to 1st inst.	750 00
Feb. 28.	By paid W. J. McIntire, for Antique Specimens, from Prebyoloff Islands, A. T.	75 00
Apr. 3.	By paid F. W. Putnam, Curator, 3 months Salary	\$450 00
Apr. 3.	By paid F. W. Putnam, Curator, Engravings, Report	100 00
Apr. 3.	By paid Augustus Story, balance for Photographs	23 50
Apr. 3.	By paid Hastings & Co., for Photographs of Gas Tablets	4 00
Apr. 3.	By paid George J. Engelman, for Missouri Pottery	200 00
Apr. 3.	By paid A. J. Colburn, for Indian Skeleton and Stone Implements	20 00
Apr. 3.	By paid Sawin's Cambridge Express	19 10
Apr. 3.	By paid F. W. Putnam, Curator, for Books	10 75
Apr. 3.	By paid F. W. Putnam, Curator, for Incidentals	11 33
Apr. 27.	By paid Salem Press, for Binding Reports	838 68
May 8.	By paid Dr. Edward Palmer, on account of Explorations in Utah, \$100; Post Orders, 50 cts.	36 23
May 10.	By paid F. W. Putnam, Curator, on account of Expense of Moving	100 50
June 11.	By paid S. F. Baird, for Casts of Faces of Indians	100 00
June 21.	By paid Dr. Edward Palmer, on account of Explorations in Utah, \$100; Post Orders, 50 cents	150 00
July 3.	By paid F. W. Putnam, Curator, one quarter's Salary	100 50
July 3.	By paid F. W. Putnam, Curator, Expenses of Moving	450 00
July 3.	By paid F. W. Putnam, Curator, Incidentals	135 62
July 3.	By paid F. W. Putnam, Curator, Incidentals	85 10
July 3.	By paid F. W. Putnam, Curator, Books	15 00
July 3.	By paid F. W. Putnam, Curator, for sundry expenses of Moving	200 00
July 24.	By paid Salem Press, for Printing Report	885 73
July 31.	By paid F. W. Putnam, Curator, Appropriation for purchase of Collections	686 15
July 31.	By paid F. W. Putnam, Curator, Appropriation for Explorations in the South	200 00
July 31.	By paid Dr. C. C. Abbott, for Explorations in New Jersey	200 00
Aug. 10.	By paid P. Schumacher, on account of Explorations in California, \$250 Gold; premium 5½ per cent., \$13 12; Telegraph Transfer, \$5.33	50 00
Aug. 11.	By paid J. N. Curtis, Janitor, for July	100 00
Aug. 11.	By paid Henry Gillman, on account of Explorations in Florida	150 00
Aug. 17.	By paid Dr. C. C. Abbott, on account of Explorations in New Jersey	50 00
Aug. 24.	By paid Dr. Edward Palmer, on account of Explorations in Utah	300 00
Sept. 8.	By paid P. Schumacher, on account of Explorations in California, \$150 Gold, at 3½ per cent.	155 25
Oct. 8.	By paid F. W. Putnam, Curator, one quarter's Salary	450 00
Oct. 8.	By paid J. N. Curtis, pay as Janitor for August and September	100 00
Oct. 8.	By paid F. W. Putnam, Curator, for Explorations in Tennessee (Appropriated July 31)	301 55
Oct. 8.	By paid F. W. Putnam, Curator, for Collections purchased (Appropriated July 31)	61 70
Oct. 8.	By paid F. W. Putnam, Curator, for Incidentals	77 23
Oct. 15.	By paid P. Schumacher, on account of Explorations in California, \$100, Gold, at 3½ per cent.	960 47
Nov. 20.	By paid Walworth Man'g Co., for Fire Irons, etc.	103 25
		20 10

Carried forward\$6,450 41

Dr.*Brought forward*£10,097 06£10,097 06

Cr.

\$6,150 41

Brought forward

Nov. 26.	By paid Dr. Edward Palmer, on account of Explorations in Utah	30 50	
Nov. 26.	By paid Dr. Edward Palmer, one-half of appropriation for Exploration in Mexico	500 00	
Nov. 26.	By paid F. W. Putnam, Curator, for Explorations in Tennessee	200 00	
Nov. 26.	By paid F. W. Putnam, Curator, for paid for Missouri Pottery	45 00	
Nov. 26.	By paid Paul Schumacher, for balance for Collections in California	45 00	
Nov. 26.	By paid F. W. Putnam, Curator, for Incidentals	118 41	988 91
Dec. 28.	By paid F. W. Putnam, Curator, Appropriation for Plates in Report		200 00
1878.			
Jan. 8.	By paid F. W. Putnam, Curator, Salary one quarter, to 1st	450 00	
Jan. 8.	By paid F. W. Putnam, Curator, for paid for Books	26 75	
Jan. 8.	By paid F. W. Putnam, Curator, for paid for Incidentals	41 18	
Jan. 8.	By paid J. N. Curtis, Janitor, 3 months pay to 1st	150 00	
Jan. 8.	By paid Sawin's Express	163 67	
Jan. 8.	By paid E. T. Jenks, for Tin Cases	10 00	841 60
Jan. 22.	By Cash in hands of the Treasurer		1,888 14

\$10,067 06

Dr.

For Building Fund.

1877.			
Jan.	17.	To Balance in hands of Treasurer	322 60
Feb.	5.	To rec'd on sale of \$2,000 Worcester & Nashua R. R. Bonds, at 3 per cent. advance, and Interest	2,108 60
Apr.	4.	To rec'd 6 months' Interest on Worcester & Nashua R. R. 7 per cent. Bonds to 1st	315 00
Apr.	4.	To rec'd 6 months' Interest on Boston, B. & Gardner R. R. 7 per cent. Bonds to 1st	175 00
Apr.	4.	To rec'd Dividend on State Bank Stock, 2½ per cent.	105 00
May	8.	To rec'd on sale of Boston, B. & Gardner R. R. Bonds, \$5,000, at 1 per cent. advance and Interest	5,086 94
July	7.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes, to 1st, Gold	1,500 00
July	7.	To rec'd on sale of above, \$1,500 Gold, at 5½ per cent.	78 75
Oct.	2.	To rec'd 6 months' Interest on Worcester & Nashua R. R. Co. Bonds	315 00
Oct.	6.	To rec'd Dividend on State Bank Stock, 2½ per cent.	105 00
Oct.	8.	To rec'd on sale of \$3,000 Worcester & Nashua R. R. Co. 7 per cent. Bonds at 6 per cent. and Interest, \$12.25	9,552 25
Oct.	17.	To rec'd on sale of 42 shares of State N. Bank at 8½ per cent.	4,546 50
1878.			
Jan.	8.	To rec'd 6 months' Interest on Mass. 5 per cent. Specie Notes, to 1st inst., Gold	1,500 00
Jan.	8.	To rec'd on sale of above, \$1,500, Gold, at 2 9-16 per cent.	38 44
			1,538 44

\$25,749 08

Cr.

For Building Fund.

1877.			
Feb.	5.	By paid John Farquhar & Sons, for Roof of Building	2,187 38
Feb.	27.	By paid Robert H. Slack, Architect, on account	250 00
May	7.	By paid G. W. & F. Smith, on account of Iron Work	1,250 00
May	7.	By paid Robert H. Slack, Architect, on account	200 00
			1,450 00
May	14.	By paid John Mack, on account of Plastering	500 00
June	4.	By paid John Mack, on account of Plastering	800 00
July	5.	By paid John Mack, Balance on Contract, Plastering	1,226 00
July	5.	By paid Waldo Bros., for Tiles	143 60
July	5.	By paid Joseph W. Greggs, for Tiles	52 12
July	5.	By paid Edward F. Meary, for Tiles	184 50
			1,556 22
July	13.	By paid Hancock & Greeley, on account of Carpentry	2,500 00
Aug.	1.	By paid Robert H. Slack, Architect, on account	225 00
Aug.	3.	By paid Robert H. Slack, Architect, on account his order to Th. Lyman	125 00
Aug.	15.	By paid William Lumb, bill of Plumbing	470 12
Aug.	15.	By paid F. P. Canfield, bill of Elevator	500 00
			970 12
Oct.	11.	By paid Hancock & Greeley, balance of Carpentry	2,552 17
Oct.	11.	By paid G. W. & F. Smith, balance of Iron Work	1,470 30
Oct.	11.	By paid Walworth Man'g Co., for Steam Apparatus	1,918 70
Oct.	11.	By paid Wm. C. Poland & Sons, balance of Masonry	6,931 14
Oct.	11.	By paid Joseph W. Greggs, for Slate	8 43
Oct.	11.	By paid Robert H. Slack, for balance of \$2,500, as Architect	100 00
			12,960 74
Nov.	20.	By paid Bliss & Perkins, for Gas fittings	109 75
Nov.	20.	By paid W. H. Wentworth & Co., for Soapstone	82 50
Nov.	20.	By paid American Rubber Co., for Steppings	81 90
			274 15
1878.			
Jan.	8.	By paid Sawin's Express	8 52
Jan.	8.	By paid Worcester, Bros., for Furniture	16 45
Jan.	8.	By paid W. P. Richardson, for Coal	97 50
Jan.	8.	By paid T. E. Saunders, for Cloth for Cases	9 42
Jan.	8.	By paid G. G. Page & Co., for Wooden Trays	38 10
Jan.	8.	By paid C. A. Sawyer, for Painting Tables	2 25
			172 24
Jan.	17.	By paid A. Baumerster, for Plumbing	68 31
Jan.	17.	By paid American Rubber Co., for Mat	35 44
			103 75
Jan.	22.	By Cash in the hands of Treasurer	1,534 48

\$25,749 08

I certify that I have examined this account, and find the items to correspond with the vouchers, and to be correctly computed, and that the securities are in the Treasurer's possession.

S. F. HAVEN, Auditor.

Jan. 22, 1878.

TWELFTH ANNUAL REPORT

OF THE TRUSTEES

OF THE

PEABODY MUSEUM

OF

AMERICAN ARCHÆOLOGY AND ETHNOLOGY,

**PRESENTED TO THE PRESIDENT AND FELLOWS OF
HARVARD COLLEGE, FEBRUARY, 1880.**

VOL. II. No. 3.

CAMBRIDGE.
PRINTED BY ORDER OF THE TRUSTEES.
1880.

**PRINTED AT THE SALEM PRESS,
SALEM, MASS.**

CONTENTS.

	PAGE.
LIST OF TRUSTEES AND OFFICERS	462
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	464
ABSTRACT FROM THE RECORDS	465
REPORT OF THE CURATOR	466
LIST OF ADDITIONS TO THE MUSEUM AND LIBRARY DURING THE YEAR 1878	482
MEASUREMENTS OF CRANIA FROM CALIFORNIA	497
FLINT CHIPS, BY C. C. ABBOTT	506
THE METHOD OF MAKING POTTERY AND BASKETS BY THE INDIANS OF SOUTHERN CALIFORNIA, BY PAUL SCHUMACHER	521
THE ANCIENT SOAPSTONE QUARRIES NEAR WASHINGTON, D. C., BY ELMER R. REYNOLDS	526
DESCRIPTION OF AN ANCIENT STONE PUEBLO ON THE ANIMAS RIVER, NEW MEXICO, WITH A GROUND PLAN, BY LEWIS H. MORGAN	536
ON THE SOCIAL ORGANIZATION AND MODE OF GOVERNMENT OF THE ANCIENT MEXICANS, BY AD. F. BANDELIER	557
REPORT OF THE TREASURER	700

PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY

IN CONNECTION WITH
HARVARD UNIVERSITY.

FOUNDED BY GEORGE PEABODY, OCTOBER 8, 1806.

TRUSTEES.

ROBERT C. WINTHROP, Boston, 1866.
CHARLES FRANCIS ADAMS, Quincy, 1866.
FRANCIS PEABODY, Salem, 1866; *deceased*, 1867.
STEPHEN SALISBURY, Worcester, 1866.
ASA GRAY, Cambridge, 1866.
JEFFRIES WYMAN, Cambridge, 1866; *deceased*, 1874.
GEORGE PEABODY RUSSELL, Salem, 1866, *resigned*, 1876.
HENRY WHEATLAND, Salem, 1867. Successor to Francis Peabody, as
President of the Essex Institute.
THOMAS T. BOUVÉ, Boston, 1874. Successor to Jeffries Wyman, as
President of the Boston Society of Natural History.
THEODORE LYMAN, Brookline, 1876. Successor to George Peabody Rus-
sell, by election.

OFFICERS.

ROBERT C. WINTHROP, *Chairman*, 1866.
STEPHEN SALISBURY, *Treasurer*, 1866-1879.
GEORGE PEABODY RUSSELL, *Secretary*, 1866-1878.
HENRY WHEATLAND, *Secretary*, 1873.
JEFFRIES WYMAN, *Curator of the Museum*, 1866-74.
ASA GRAY, *Curator of the Museum, pro tempore*, 1874-1875.
FREDERICK W. PUTNAM, *Curator of the Museum*, 1875.
LUCIEN CARR, *Assistant Curator of the Museum*, 1877.
MISS JENNIE SMITH, *Assistant*, 1878.
EDWARD E. CHICK, *Janitor*, 1878.

TWELFTH ANNUAL REPORT.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

THE Trustees of the Peabody Museum of American Archaeology and Ethnology herewith respectfully communicate to the President and Fellows of Harvard College, as their Twelfth Annual Report, the Reports of their Curator and Treasurer for the year ending in January, 1879.

ROBERT C. WINTHROP,
CHARLES FRANCIS ADAMS,
STEPHEN SALISBURY,
ASA GRAY,
HENRY WHEATLAND,
THOMAS T. BOUVÉ,
THEODORE LYMAN.

CAMBRIDGE,
FEBRUARY, 1880.

ABSTRACT FROM THE RECORDS.

WEDNESDAY, JANUARY 15, 1879. The Annual Meeting of the Board of Trustees was held this day at noon in the Museum, Cambridge. Present: Messrs. WINTHROP, ADAMS, SALISBURY, WHEATLAND, BOUVÉ, and the CURATOR.

The Report of the TREASURER was read and accepted, and ordered to be printed under the direction of the Treasurer and Curator, as a part of the Twelfth Annual Report of the Board.

The Hon. STEPHEN SALISBURY again stated his wish to be relieved from the duties of Treasurer, and his resignation was accepted, with the request that he would hold the funds as ex-treasurer until the completion of arrangements now pending for the future care of the same.

The Report of the CURATOR was read and accepted, and ordered to be printed, with the accompanying papers, as a part of the Twelfth Annual Report of the Board.

The appropriations proposed by the Curator were agreed to and unanimously voted, and Mr. Salisbury, as ex-treasurer, was authorized to transfer to the Curator a sufficient sum from the income to meet the same.

The meeting then adjourned.

HENRY WHEATLAND,

Secretary of the Board.

REPORT OF THE CURATOR.

To the Trustees of the Peabody Museum of Archaeology and Ethnology:—

GENTLEMEN:— Since your meeting here, not quite a year ago, much valuable material has been added to the Museum; indeed during no preceding year have the operations of the Museum been so extended, nor have larger returns ever been received from explorations conducted under its directions. The special explorations referred to may be briefly recorded as follows:—

The continuation of Dr. Abbott's work in New Jersey. This has increased in importance, and several thousand stone implements, with numerous other articles, including two human crania, have been the tangible results to the Museum.

As it is Dr. Abbott's desire to continue his field work during the present season and make still more extended researches before presenting a full report on the Stone Age of New Jersey, it will only be necessary for me to state, at this time, that he has had continued good fortune in finding the rude stone implements of the gravel beds along the Delaware River, and that he has brought to light from ancient graves and ploughed fields, formerly village sites, several forms of implements and ornaments of stone which have heretofore been regarded as more or less peculiar to the Ohio Valley.

The two human crania, received from Dr. Abbott, are of particular interest; one probably being the skull of a Shawnee Indian, while the other, which is of entirely different shape, small, long, and very thick, was found in the gravel under such circumstances as to lead to a belief in its very great antiquity.

The continuation of Mr. Schumacher's explorations in Southern California. Although Mr. Schumacher was obliged to expend a considerable portion of the funds placed at his disposal during the early part of the year in an exploration for antiquities in the

southern part of California, which was principally negative in result, he afterwards made another trip to a portion of the Island of Santa Catalina (which he had only partially explored during the preceding year) and there obtained very important additions to his former collection, including several unique articles.

While on his trip across the southern portion of the State, from Santa Barbara to the Colorado River, Mr. Schumacher passed several days with the Indians in the vicinity of some of the old Spanish missions, and obtained as perfect a representation as possible of their manufactures, including a large number of the beautiful water-tight baskets and the materials of which they are made.

He also secured a good supply of native pottery, made by coiling cylinders of clay upon themselves, which is probably the most widely distributed method of manufacture among primitive potters. From Mr. Schumacher's notes relative to the manufacture of baskets and of the method of making vessels of clay by the Indians of southeastern California, I have prepared a short paper hereto annexed.

The explorations of Mr. Henry Gillman in the vicinity of Aledo, Florida. The result of Mr. Gillman's examination of several burial mounds in northern Florida, while meagre in regard to specimens, are of considerable interest. In a paper presented by him to the St. Louis meeting of the "American Association for the Advancement of Science," he gives an account of his discovery of what he believes was the utilization of human crania as cinerary urns by one of the ancient tribes of Florida. The exploration of the mound, which contained this supposed unique method of disposing of the ashes of the dead, was undertaken while acting for the Museum, and the fragments of the crania referred to have been received.

Mr. Gillman, also, during his explorations, obtained portions of several vessels of clay; two of which are of extreme interest from their superior character and close resemblance to the best pottery from the Ohio mounds.

One of these fragments is of a large bowl-like vessel with a smooth surface, upon which is an inscribed scroll pattern of good design and execution; the other is a portion of a large vessel of red pottery, upon the surface of which are very broad and deep grooves. This vessel (of which unfortunately only one large fragment was found) must have been very much like one from a

mound in Ohio, which is figured by Messrs. Squier and Davis on their plate 46.

Numerous other fragments of pottery, of forms common in the burial mounds and in the upper beds of the shellheaps of Florida, were also obtained, as well as a few arrowpoints, numerous flint and jasper chips, and human bones exhibiting signs of having been partially burnt.

From one of the mounds Mr. Gillman obtained an egg-shaped vessel of clay, which has a thick silicate glaze on the inside and about its mouth. A detailed description of this vessel has been given by him in the *American Naturalist* for December last. In his remarks upon this jar he states that it is the first instance of the finding of a glazed jar in the ancient mounds of North America, and regards it as an important discovery, showing that the art of glazing pottery was known to the ancient Americans.

This jar is now with the collection forwarded to the Museum, and I am forced to state that the conditions of apparent great antiquity of the mound in which the jar was found, has probably led the discoverer into error; as there can hardly be a doubt that the jar in question is of Spanish origin.

No North American nation before the advent of Europeans, so far as yet known, had acquired the art of giving a silicate glaze to pottery; the nearest approach to it being the salt-like glaze given to the pottery of the ancient Pueblo nation, and the thick varnish-like glaze used by old nations of Central America and Mexico; but these are entirely different from the thick silicate glaze seen on the jar from Florida. Then, again, the many explorations of burial mounds in Florida have proved conclusively that a large number of these tumuli are of comparatively recent origin, and many European articles of pottery, brass, iron, gold, glass, etc., have been found in some mounds of apparent great antiquity. In fact it is particularly to the tumuli of Florida that we must turn to prove the continuance of mound building, by some Indian tribes, down to a comparatively recent period.

Explorations in Central America. Acting under a special appropriation, which it will be greatly to the advantage of the Museum to renew, if it is possible, Dr. Earl Flint, an enthusiastic archaeologist and careful collector, residing in Nicaragua, has made very important researches in relation to the ancient nations

of that region; and has forwarded to the Museum an interesting collection of pottery, and other articles, including a few human crania, from the graves, mounds, and caves of several places in Nicaragua. He has also, at great labor and pains, made careful drawings of the carvings on the walls of several caves, and upon stones in their vicinity.

Dr. Flint has also investigated some of the ancient shellheaps of Nicaragua, and feels confident that he has obtained evidence proving the great antiquity of the human race in Central America.

As Dr. Flint's views will be embodied in extracts from his letters, which I propose to bring together as special papers to accompany future reports, I will here simply call attention to the interest attached to the drawings of the rock carvings, which it is proposed to reproduce in the next report, and to the large collection of burial urns, jars, vases, dishes, and many other articles of clay obtained from the burial mounds. Some of these vessels are of peculiar shapes and others are elaborately ornamented by carving, and in color. It is proposed to give figures of many of these jars in a future report accompanied by a full description of the collection.

Explorations in Mexico by Dr. Palmer. Although Dr. Palmer has been nearly the whole year in Mexico engaged in making collections of antiquities, and of articles which will illustrate the manners and customs of such Indian tribes as still retain their primitive habits, I shall defer extended notice of his work until the next report, as the specimens already received at the Museum will not be arranged and catalogued until Dr. Palmer's return, which will probably be in a few weeks. Suffice it now to mention, that fourteen large cases have arrived from him, and that two other invoices are on the way.

Continuation of the explorations in Tennessee. Acting under my directions, Mr. Curtis has continued the work I began in Tennessee, by exploring several village sites in the Cumberland Valley, in furtherance of my desire to make such a thorough research among the ancient mounds and cemeteries of this important centre of an ancient American nation, as will secure for the Museum as large a collection as possible of all that remains of this ancient people, and furnish the means for preparing such a comprehensive report as the importance of the subject demands. From the material now received from the mounds and stone graves

of the Cumberland Valley, the evidence of the unity of the ancient people of that valley with those of southern Illinois and Missouri is already sufficient to warrant the statement, which every additional collection so far seems to confirm, that one great nation or people, probably having many subdivisions of tribes and villages, formerly covered the country extending not far from the western banks of the Mississippi, eastward to the southern Alleghany, southward towards the Gulf of Mexico, and northward towards the Ohio valley. The exact limits in these directions, and the relation of the mounds of the Ohio valley with those of the south, are yet to be determined, but the explorations now in progress and in contemplation by the Museum will in time probably solve this interesting question. In this brief notice of the continuation of the explorations in Tennessee I cannot do justice to the many favors received from the hospitable and generous people of the state, who, from their appreciation of the work in hand, have added largely to the collections by giving to the Museum many interesting articles found in former years, and have in many ways aided in the work of exploration,—often permitting the thorough examination of mounds and cemeteries by the agents of the Museum, while very properly refusing permits to incompetent investigators and mere collectors of curiosities. In the extended report which will be made hereafter, it will be a pleasure to allude particularly to the many favors received.

Cahokia Mound. In company with several gentlemen from St. Louis I had the good fortune in September last to visit the largest mound within the limits of the United States.¹ Although this

¹ Brackenridge (Trans. Am. Phil. Soc. Vol. 1, new series), in his enumeration of the large mounds of the Ohio and Mississippi valleys (1813), refers to one "near Washington (M. T.) 146 feet in height." The mound thus designated is unquestionably identical with the one described in the *Appendix* of Brackenridge's "Views of Louisiana" (1814), p. 278, by Rev. Mr. Schomerhorn, who states that "at Sutzertown, M. T. six miles from Washington, is a very remarkable mound. * * * Its form is a parallelogram * * * and measured outside of the ditch contains more than six acres. The first elevation is forty feet, the area of which may contain four acres." On this level portion are several mounds, one of which is "eighty-six" feet high, measured from the base of the lower structure, and another "whose height is fifty feet, but appears to have been considerable higher."

Rev. Mr. Mills, l. c. p. 280, also communicates an account of this mound to Mr. Brackenridge in which the following dimensions are given: Area, measured at the base, between three and four acres. "The mound was raised 46 feet above the common level of the ground; near the middle of the west line was raised a large mound of a circular form, 40 feet above the first level of the fortification, making the distance from the top of the mound 86 feet above the common level of the ground." Mr. Mills then states that the mounds had long been cultivated and that they were probably reduced

mound has been described or alluded to by many writers, there exists considerable confusion in regard to its name, size, and exact location, and Col. Foster, in his "Pre-historic races of the United States" (p. 107), actually regrets that "it has been swept away by the levelling influence of modern improvement."

By several writers, the name of "Monks' Mound" has been bestowed upon this tumulus, under the belief that the settlement of the order of La Trappe was upon its summit. The statements of Brackenridge,² who visited the place in 1811, while the Trappists still had their settlement, show, however, that the mound upon which the Monks were located was the smaller structure, of a similar shape, situated a short distance to the westward of the "great mound," and that the apron of Cahokia Mound was used as a vegetable garden and its summit was then planted with wheat. While there is not the slightest evidence that the *Cahokias* of the time of La Salle were the builders of this, or of other mounds in the vicinity, it is a gratification to be able to perpetuate the name of an extinct tribe of American Indians in connection with this monument of an unknown American Nation, rather than that of a religious order of foreign origin.

"30 or 40 feet, which latter number added to the 80 feet, its present height, would make it 120 feet above the ground at its base."

From these accounts the actual height of the highest point on the mound, about the year 1813, was 80 feet, and the *estimated* original height by Mr. Schemerhorn, 90 feet, by Mr. Mills 120 feet, and given by Brackenridge, probably by a slip of the pen, or typographical error, at 140 feet. As will be seen from the above figures, this mound is thus far below Cahokia in its area, and if the *estimated* height of the small mound, which is said to have been removed from the top of Cahokia, should be added to its present height Cahokia would have its highest point over one hundred feet above the surrounding land, and as the forty feet of erosion allowed by Mr. Mills is a very liberal allowance, it is probable that Cahokia originally, as at present, was provided with the highest summit.

For later observations on the Seltzerstown mound see Squier and Davis, p. 117.

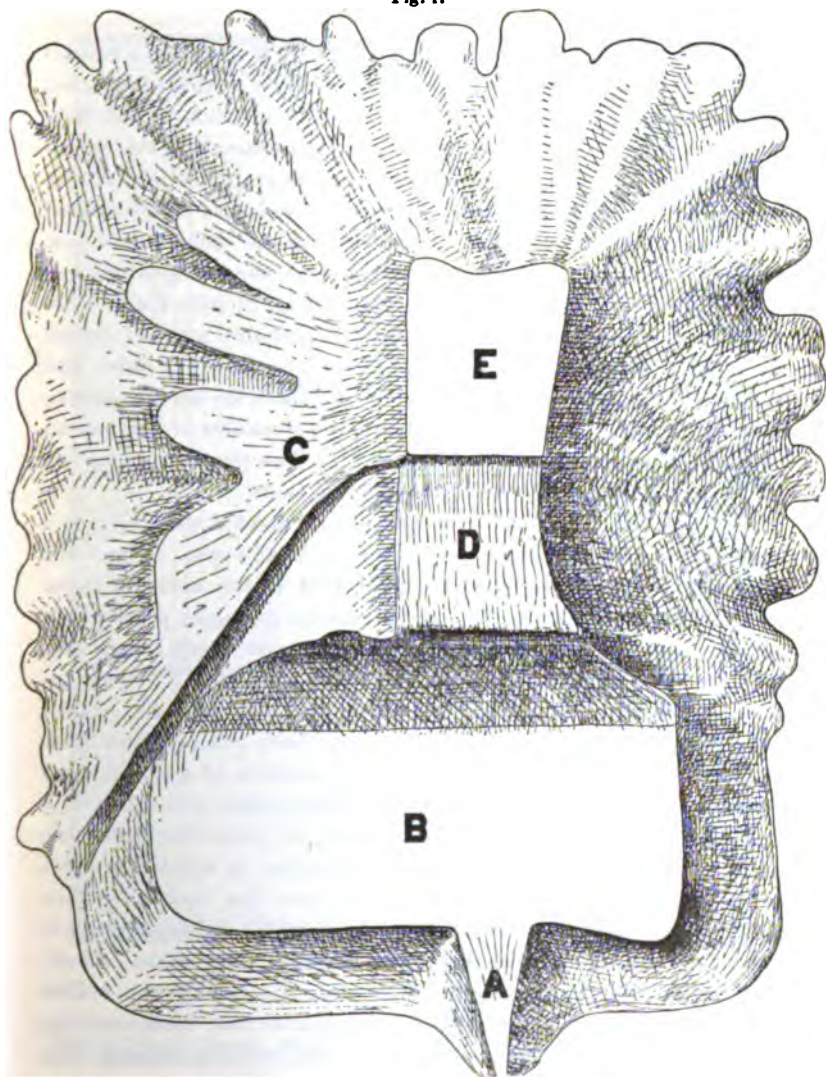
² Views of Louisiana, 1814, p. 188, and *Appendix* p. 287. On the last quoted page this smaller mound, which, if any is to be so designated, should be called The Monks' Mound, is stated to be "about *fifty yards* high," evidently a misprint for fifty feet.

Featherstonhaugh, "Excursion through the Slave States" in 1834-5, New York, 1844, pp. 66-7, also states that the settlement of the Monks was upon the smaller mound to the west, but at the time of his visit the building in which they lived had been levelled with the ground and but few remains of it were visible. He also states that at the time of his visit a Mr. Hill was living in a house he had erected on the top of the Great Mound, and that "Mr. Hill laid the foundation of his dwelling upon an eminence he found on the summit of his elevated territory, and upon digging into it, found large human bones, with Indian pottery, stone axes, and tomahawks."

Latrobe, "The Rambler in North America," New York, 1835, visited the mound on the Cahokia in 1833, and gives, Vol. II, p. 18, a similar statement to the above in relation to the former settlement of the Monks.

Situated in the midst of a group of about sixty other mounds, of more than ordinary size, several in the vicinity being from 30

Fig. 1.



Plan of Cahokia Mound in 1878. From model by Dr. Patrick. Scale 200 feet to an inch.

to 60 feet in height, and of various forms, Cahokia Mound, rising by four platforms, or terraces, to a height of about one hundred

feet, and covering an area of over twelve acres, holds a relation to the other tumuli of the Mississippi Valley similar to that of the Great Pyramid of Egypt to the other monuments of the Valley of the Nile.

I am glad to be able to state that Dr. J. J. R. Patrick, a careful and zealous archæologist, residing in the vicinity of this interesting monument, has, with the assistance of other gentlemen, not only made a survey of the whole group of which Cahokia is the prominent figure, but has also prepared two accurate models of the mound itself; copies of which have been promised to the Museum.³

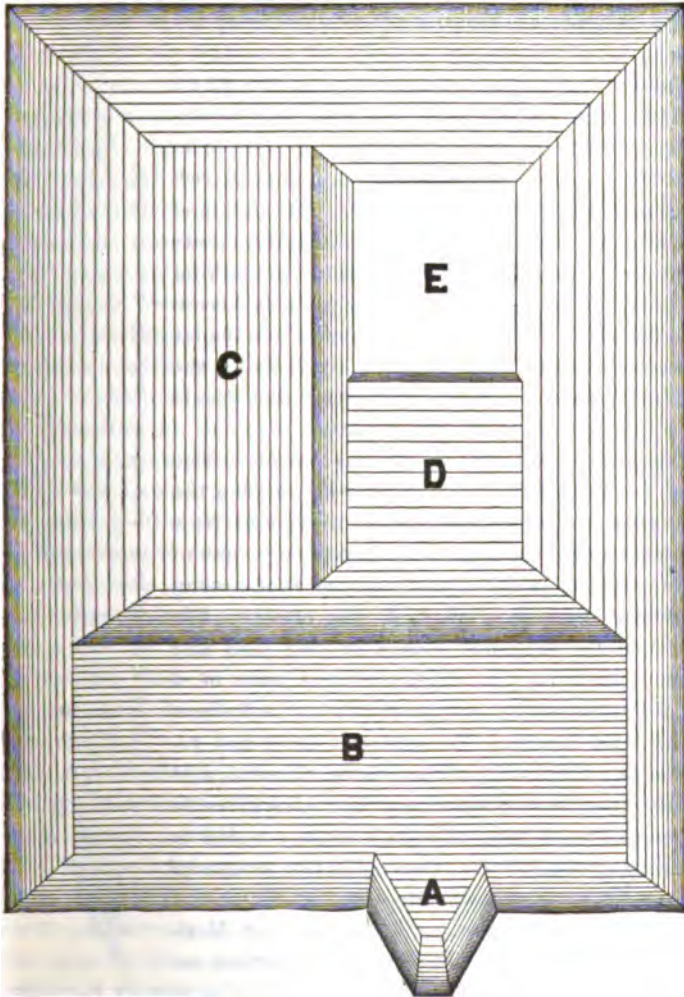
One of these models (Fig. 1) represents the mound as it now appears, with its once level platform and even slopes gullied, washed, and worn away; and the other (Fig. 2) is in the form of a restoration, showing the mound as it probably existed before the plough of the white man had destroyed its even sides and hard platforms, and thus given nature a foothold for her destructive agencies. I have also in Fig. 3 shown the elevation of the mound from the west as represented in Fig. 2. The projecting portion (A) from the apron (B) points nearly due south.

Probably this immense tumulus was not erected primarily as a burial mound, though such may prove to be the case. From the present evidence it seems more likely that it was made in order to obtain an elevated site for some particular purpose; presumably an important public building. One fact, however, which I observed, indicated that a great length of time was occupied in its construction, and that its several level platforms may have been the sites of many lodges, which, possibly, may have been placed upon such artificial elevations in order to avoid the malaria of a district, the settlement of which in former, as in recent times, was likely due to the prolific and easily cultivated soil; or, more likely, for the purpose of protection from enemies. The fact to which I allude, is that everywhere in the gullies, and over the broken surface of the mound, mixed with the earth of which it is composed, are quantities of broken vessels of clay, flint chips, arrow-heads, charcoal, bones of animals, etc., apparently the refuse of a numerous people; of course it is possible that these remains, so unlike the homogeneous structure of an ordinary mound, may be the simple refuse of numerous feasts that may have taken

³ As these models were received just as this report was going to press, I have had the accompanying illustrations prepared from them as furnishing the most accurate representation I have seen of this important tumulus.

place on the mound at various times during its construction. The first interpretation, however, is as well borne out as any

Fig. 2.



Plan of Cahokia Mound. Restoration. From model made by Dr. Patrick. Scale 200 feet to one inch. A. B. the lowest platform; C. the second platform; D. the third; E. the fourth and highest.

other from our present knowledge of this mound; the structure and object of which cannot be fully understood until a thorough

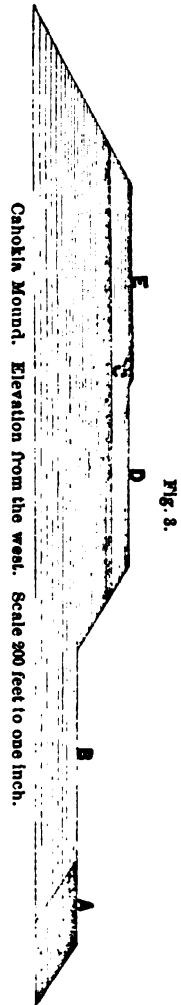
examination has been made, and while such an examination is desirable, it is to be hoped that this important and imposing monument will never meet the fate which Col. Foster, under a false impression⁴ due to a confusion of names and places, mourns as having already occurred.

Ancient Indian Quarry near Washington, D. C. Mr. Elmer R. Reynolds, of Washington, the discoverer of the ancient quarry on the Potomac, has kindly sent to the Museum an important collection of fragments of soapstone pots obtained at the quarry, of which he has furnished an account, with remarks upon the method of making the pots. The paper by Mr. Reynolds is hereto annexed, and will be found to be of particular interest in connection with the accounts of the ancient Indian quarries of California and Rhode Island, described in the last report.

Description of an Ancient Stone Pueblo. The Hon. Lewis H. Morgan having made, during the past year, a special trip to Colorado and New Mexico for the purpose of investigating some of the ancient ruins and Cliff-houses of that archaeologically interesting part of our country, has furnished the Museum with a ground plan and description of a remarkable ancient ruin of a Stone Pueblo which he examined on the Animas River, New Mexico. This plan I have had redrawn on a large scale for use in the Museum, and a photographic reproduction of it is also given in connection with Mr. Morgan's paper, which is herewith presented for printing in full as one of the special papers of this Report.

The Social Organization of the Ancient Mexicans is the title of the third of the important series of papers by Mr. Bandelier, which I also submit for publication in connection with this Report.

Cranial Measurements. During the past year a large number



⁴ The destruction of "Big Mound" on the opposite side of the river, within the city limits of St. Louis, probably led Col. Foster into error.

of human crania have been received, and, with many others belonging to the same groups, obtained in previous years, have been measured, principally by Miss Smith acting under the special directions of Mr. Carr. As Mr. Carr contemplates spending the greater part of the present year in Europe, with special reference to the study of the crania in the principal collections of England and France, and of the various methods of measurements used by craniologists abroad, it has been deemed best to print in this Report simply the tables relating to the important collection of crania from California.

The Additions to the Museum during the past year have been of exceeding interest and more numerous than in any former corresponding period. Over three thousand entries of articles received have been made in the catalogue; and in order to give you an opportunity of easily seeing the accumulations of the year, all the additions (with the exception of the Mexican collection to which I have previously alluded) have been placed as far as possible in the new cases; thus completely filling one gallery, as well as many of the shelves about you.

While the extended explorations, with a few important purchases during the year, have been the means of securing the larger portion of these specimens, it is gratifying to note that many have been given by friends of the Museum, and to a few special collections I have great pleasure in calling your particular attention.

By far the most important gift during the year is that from Mr. CLARENCE B. MOORE, of Philadelphia, a graduate of the class of 1873.

This important addition is not only of considerable value, but also of great scientific interest, and particularly acceptable to the Museum, as it provides us with a choice general collection of ancient bronze implements from various parts of Europe, which we were in need of for comparison, and also a considerable addition to our already large collection from the Swiss Lakes. As will be seen by the enumeration on another page, the articles from the Swiss Lakes cover one hundred entries in the catalogue, and include among other choice specimens, stone implements still in their original sockets and handles of horn.

Another hundred entries are given to the very interesting lot of Egyptian antiquities, which includes several statuettes and

other stones with hieroglyphics, numerous amulets, scarabei, etc., and several articles in bronze.

As the Museum was very poorly supplied with illustrations of Egyptian art, this authentic collection from Thebes is the more acceptable, containing as it does so many choice and typical specimens. To the rest of the Museum it will bear a relation similar to the collection of ancient Mexican ceramic art and sculpture received from the late Hon. Caleb Cushing, whom we have the honor of classing among the earliest contributors to the Museum.

As the Moore collection is noted more in detail on another page, I will only mention that with a perfect appreciation of the objects of the Museum, and the importance of leaving full scope for the arrangement of such materials as come to it, Mr. Moore has presented this valuable collection without restrictions.

To Dr. SAMUEL KNEELAND, of Boston, we are also greatly indebted for the gift of his private collection of ethnological and archæological material.

This collection is especially rich in human crania, many of which were collected by the donor on the Island of Maui; also one of a Hindoo, two of African negroes, and several of North American Indians from Maine, Massachusetts, Rhode Island, and Florida. There are also a number of stone implements from the Sandwich Islands, and from the United States; also several articles from the native tribes of Africa, presented to Dr. Kneeland by M. Paul du Chaillu, and several other interesting specimens, as will be seen from the special list on another page.

From Mr. EDWIN A. FLINT, of Boston, while in Peru, we received through Mr. Agassiz, early in the year, several beautiful specimens of ancient pottery from the vicinity of Lake Titicaca, which are unlike any previously in the Museum. Mr. Flint has also presented two large stones upon which have been cut many singular figures. These ancient rock inscriptions from an Andean pass are of particular interest in comparison with those in Nicaragua, of which we have received drawings from Dr. Earl Flint, and also with the numerous carvings upon the rocks and walls of caves in our own country. When we recall the difficulty of removing such large masses of stone from the high passes of the Andes to the coast for shipment, and the care required in exhuming and packing the fragile vessels of clay, we can but feel

particularly grateful to Mr. Flint for his labors in behalf of the Museum.

In connection with this reference to the increase of the Peruvian collection, I have the pleasure of stating that the several Peruvian crania, of the elongated type, referred to in the last report as a portion of the Blake collection, but not then received, have since been added to the valuable collection presented by Mr. JOHN H. BLAKE, of Boston, and of which a special account was given in the last report.

To Mr. CHARLES DERBY, of Salem, a gentleman who for several years past has been a resident of Honolulu, and a traveller among the Pacific Islands, we are indebted for a small, but exceedingly interesting collection of articles of native manufacture obtained by himself at the Fiji Islands. As will be seen by the special record of this donation, there are several articles contained in it which probably could not now be duplicated, since European influence has modified the habits of the natives.

Mr. ALEXANDER AGASSIZ has shown his continued interest in the Museum, by a transfer from the Zoological Museum of numerous specimens, particularly those obtained by the late Professor Louis Agassiz from Indian tribes in Brazil, during the famous Thayer Expedition.

The most important additions secured by purchase during the year consist of the large lot of articles of pottery from the mounds of Illinois and Missouri, and the *Clogston Collection*.

This last, purchased of Mr. Wm. Clogston, of Springfield, is particularly rich in Indian and Moundbuilders' pipes, and in the singular perforated stones from the Ohio valley. There are also several vessels of clay and other articles found in the mounds of Ohio and Kentucky, and as will be seen by the detailed account of the collection given in the "List of Additions," it is one of more than ordinary interest and importance, adding many forms new to the Museum, or of which we before had but meagre representation. It is recorded in the catalogue under four hundred and eighteen entries.

For the many other additions during the year, covering in all over three thousand entries, I must refer to the special list of donations and additions hereto annexed.

The Library. In relation to the increase of the Library of the Museum during the year, it will be sufficient for me to refer to the special record of the hundred and odd volumes and pamphlets

which have been received; although I cannot omit special mention of the valuable donation of twenty-two volumes of Japanese works which we have lately received from the IMPERIAL UNIVERSITY OF TOKIO. These volumes contain an account, with many colored illustrations, of the ancient customs of the Japanese, and are of very great ethnological value, and I am informed that they are now seldom to be obtained.

I must also call attention to the continued efforts of Mr. THOS. G. CARY, in behalf of the Museum, and the several donations of books and photographs which we have received from him during the year. I may here mention too, the receipt, from the President of the Board of Trustees, of the large lithographic portrait of Mr. Peabody, which now hangs in this room, and that we have also received one of the medals struck by order of the Trustees of the Peabody Education Fund, to whom we are indebted for this additional memorial of the honored founder of this Museum.

Mr. CARR, as assistant Curator, has been a most faithful coadjutor, and while I am personally indebted to him for the assistance which he has given in the many details of administration, I should not be doing justice to him or to myself if I allowed this opportunity to pass without an expression of my appreciation of the great value of his voluntary services in the Museum.

To Mr. LUCIEN CARR, Jr., I must also express my thanks for the faithful manner in which he performed the duties of special temporary assistant for a few months in the early part of the year.

Miss JENNIE SMITH, who was appointed special assistant in March last, has proved a very important worker in the Museum; and the thorough and conscientious manner in which she performs all that is assigned to her, combined with the experience of nearly a year, renders the permanency of her appointment very much to be desired.

Owing to ill health Mr. Curtis resigned the position of janitor, and Mr. E. E. CHICK has been appointed in his place and is rapidly proving himself particularly adapted to the position. In addition to the care of the building he is now giving important assistance in the details of Museum work.

Now that the important work of constructing the permanent cases in the several exhibition rooms has fairly passed its trial stage and is well under way, the opportunity will soon be given

for the arrangement of portions of the collections in a satisfactory manner, although, as the erection of the cases, under the present careful and thorough system of work, will necessarily be very slowly proceeded with, I can only hope to have the floor and gallery of one large exhibition room ready for public access by the close of the present year. When, however, it is remembered that upon the care exercised in the building of the cases at this time, and the success attained in the efforts made now to provide cases which shall hereafter protect the collections from dust and destroying insects, the very permanence of the collection itself depends, it will not be the part of wisdom to hurry the work and, for the simple gratification of an early display of our treasures, run the risk of their destruction.

The adoption of cherry as the wood best adapted to cases of the character desired for the museum, thus far, after the trial of nearly a year, seems to have been fortunate. It is now proposed to furnish the other rooms with the same wood, which, apparently, stands the changes of our climate as well as any other kind, while by its use we are able to have a simple oil finish, thus avoiding both paint and varnish upon the outside of the cases. After a series of trials of colors, in order to obtain the one which, without being tiresome to the eye, would furnish the best average background and relief to the articles within the case, a shade of light blue has been adopted for the present, and so far with satisfactory results. In regard to the perfect manner in which Mr. Thomas Wilson, of Linden, has performed the work on the cases now finished, too much praise cannot be given. With this careful carpenter engaged for the other rooms, we can confidently rely upon the future work being done with the utmost care, and feel confident that in the end cases will be secured which will be as near to perfection as we can hope to attain. In other respects many details of construction have been carefully planned, among which should be mentioned the adoption of the Jenks iron shelf-brackets and patent case-lock, both of which I regard as essential to a proper museum case. In addition to these items I must mention that the backs of the wall cases are formed by the wall of the room into which the top, bottom and sides are set in a groove in such a way as to prevent any cracks from opening at the joints, and that the tightness with which the tongued and grooved doors fit is overcome by a lever used in opening and

closing them. In addition to the wall cases, a broad railing case has been made on the same plan about the gallery, and for the floor of the room two large cases have been planned and will soon be put in place.

The only other subject of particular importance at this time, to which I beg to call your attention, is that of the publication of the many important papers which are now being prepared in connection with the Museum work. As these papers will continually increase in number, and will be principally based on explorations made under the direction of the Museum, or upon the study of the materials which have been collected, they are in every way important in showing to the world the results obtained in American Archaeology and Ethnology through the efforts of this Institution, and in presenting in an imperishable form the knowledge and facts obtained from year to year in the departments of research for which it was founded. I may also add that the publication of such descriptive papers and memoirs not only adds greatly to the character of the Museum, but also offers extraordinary inducements to individuals to make it—the only one in the country which is to be forever devoted to this one object—the depository of their archæological and ethnological treasures.

Some special provision which shall secure the proper publication of the Memoirs of the Museum is therefore greatly to be hoped for in the near future, since to use, to any great extent, our present limited income for this purpose, would prevent the collection and preservation of articles which before many years have passed away may not be obtainable.

Respectfully submitted,

F. W. PUTNAM,

Curator Peabody Museum.

CAMBRIDGE, MASS., JUN. 15, 1870.

ADDITIONS TO THE MUSEUM AND LIBRARY FOR
THE YEAR 1878.

Additions to the Museum.

13936—13939. Fragments of steatite pots in different stages of manufacture and the stone implements used in making them, taken from the ancient quarry in Johnson, R. I., by the CURATOR, and described in the 11th Annual Report, p. 273.—Presented by Mr. H. N. ANGELL of Providence.

13940—13941. Casts of two earthen vessels, the originals from Colchester and Bolton, Vt.—By PURCHASE.

13942—13945. A woman's dress from New Guinea; caps, fishing seine, and an ornamental club with stone head from Queensland.—Collected by Mr. C. E. BEDDOME, and presented by the MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge.

13946—14007. Hammerstones with and without finger pits, mullers, "chungke" stones, and celts, some of quartz very highly polished; scrapers, drills, knives, spearpoints, and arrowheads of flint from Davidson County, Tennessee; fragments of pottery, animal bones, and part of a human cranium from a cave on Cumberland River; stone celts from Maury County, Tennessee, and from the Edgefield Mound near Nashville; crania and human bones, shell beads and spoons, flint flakes and dagger, small discoidal stones and a collection of pottery, consisting of pots and bowls, etc., plain and ornamental, in human and animal forms, from stone graves on Cumberland River, near Nashville, Tenn.—Collected by Mr. E. CURTISS, in continuation of the Explorations of Tennessee by the CURATOR, conducted for the Museum.

14008—14012. Stone spearpoints, celts, and a grooved stone axe from Allenton, St. Louis County, Missouri.—Collected and presented by Mr. CHARLES E. PILLING of St. Louis.

14013—14100. "Chungke" stone from Dixon Co., Tenn.; flint arrowheads, spearpoints, knives, a stone celt and piece of polished hematite from Jackson County, Tenn.; crania and human bones, shell spoons, and shell and earthen beads, bone implements, thirty-three articles of pottery, and a collection of stone implements consisting of daggers, hoes, celts, arrowheads, etc.—Collected by Mr. E. CURTISS in continuation of the Exploration of Tennessee by the CURATOR, conducted for the Museum.

14101—14110. Human cranium, stone mortar, a bowl in terra cotta and several small earthen vessels from a grave in La Platte County, Col-

orado; a metate and grinding stone from a mound in the same county, and a grooved hammerstone from Los Pinos River, Col.—Collected and presented by Mr. T. MARTIN TRIPPE of Orange, N. J.

14111—14113. An imperfect cranium, a brass thimble, and a small tin box containing a piece of cloth, from an Indian grave at Uxbridge, Mass.—Collected and presented by Mr. A. F. ALDRICH.

14114—14115. Human bones and cranium from Briar Hill, St. Lawrence Co., New York.—Collected by Mr. S. W. GARMAN, and presented by Mr. ALEXANDER AGASSIZ of Cambridge.

14116—14118. A stone gouge, an iron tomahawk, and a small ornamental stone axe, perforated, from Sudbury, Mass.—Collected and presented by Mr. REUBEN SMITH.

14119—14166. Ear ornaments made of wood covered with copper, from a mound near Bull's Iron Works, Tenn.; small earthen cup from a grave near Fort Zollicoffer, Nashville, Tenn.; "chungke" stones and stone celts from Cheatham County, Tenn.; steatite pot from Bluff Creek; stone muller, celts and a polished scraper from near Nashville; discoidal stone, piece of hematite, human crania, and several vases in terra cotta from Mr. J. M. OVERTON's farm in the same neighborhood; discoidal stones from the surface¹ in Humphreys County, Tenn.; a "rotary" flint spearpoint, probably from the surface in the same county, collected by Mr. CHARLES BELL; human crania from stone graves and an exceedingly interesting collection of stone hoes polished by use, and celts and flint daggers, collected by Mr. BANKS LINK and by him presented to the Museum through Mr. E. CURTISS. Among these is a hoe of chipped chert 365^{mm} long and 135^{mm} wide across the blade, and a dagger of same material 251^{mm} long and 43^{mm} wide.—Collected by Mr. E. CURTISS in continuation of the Exploration of Tennessee by the CURATOR, conducted for the Museum.

14167—14170. Three small earthen bowls, one probably a toy, and fragments of pottery, from a Sand Mound on Spruce Creek, Florida, near Smyrna Inlet.—Collected and presented by Mr. J. C. WELD, of Cambridge.²

14171. Cast of an earthen pot, from Canterbury, N. H., now in the possession of Dr. Samuel A. Green, of Boston.—Presented by Dr. SAM'L A. GREEN.

14172. Pipe made of lead from an Indian grave at Revere, Mass.—By EXCHANGE.

14173—14194. Two crania and many bones of two human skeletons, implements of bone and stone, fragments of pottery, shells and animal bones from shellheaps on Great Deer Isle, off the coast of Maine, and from other points in that immediate neighborhood.—Explorations of Mr. MANLY HARDY, conducted for the Museum.

¹ All the articles from Tennessee are from stone graves, except when the contrary is specially stated.

² Mr. Weld states that the mound was 40 feet in diameter, that human bones were found in it, and that these specimens were taken from a depth of three feet from the top of the mound.

14195. Stone pipe from Nelson Co., Ky.—By PURCHASE.

14196—14206. Stone pipe, earthen pot, pieces of mica, glass and shell beads from an Indian grave at Revere Beach; stone celt, arrowheads and a rude spearpoint from the surface at same place.—By PURCHASE and EXCHANGE.

14207—14217. Grooved stone axe, arrowheads and spearpoints of stone from the surface near Sag Harbor, N. Y.; a rude implement of stone from the grave and one of quartz from a shellheap at same place.—Collected and presented by Mr. WM. WALLACK TOOKER of Sag Harbor.

14218—14283. Stone scrapers, celts, drills, arrowheads, spearpoints, knives and hammers, polishing implements of stone and coal; disks of stone, coal, and terra cotta; shell spoons; human crania; animal bones; beads of stone and terra cotta; charcoal and charred corn; earthen pipes and a collection of pots, dishes, bowls, and bottles, ornamented and plain, some painted and others in human and animal forms from stone graves near Cain's Chapel, Davidson Co., Tennessee.—Collected by Mr. E. CURTISS in continuation of the Exploration of Tennessee by the CURATOR, conducted for the Museum.

14284—14322. Earthen pipe and stopple; stone celts, spearpoints, and sharpening stone; paint, shell beads, and a collection of characteristic pottery, consisting of twenty-six specimens, from the mounds in south-eastern Missouri.—By PURCHASE.

14323—14324. Arrowheads and rude implements of quartz from Catlett's Station, Va.—Collected and presented by HUGH THOMAS DOUGLAS, Esq.

14325—14328. Stone celts, grooved hammerstones, and a stone axe from Lowell, Mass.,—region formerly occupied by the Pawtucket Indians.—Collected and presented by Mr. JOHN M. BATCHELDER of Cambridge.

14329—14333. Stone knives, spearpoints and arrowheads from Monmouth and Middlesex Counties, New Jersey.—Collected and presented by Mr. C. F. WOOLLEY.

14339—14693. Grooved stone axes and stone celts, rude and polished; carved ornaments of polished stone, some of which are perforated; scrapers, sinkers, knives, drills, spearpoints, and arrowheads, of various forms, in argillite, quartz and jasper; hammerstones round and oval, with and without finger pits; fragments of pottery and of earthen pipes and pipe stems; mica; human crania; glass and shell beads; bone implements, and a large variety of rude stone implements from the drift at Trenton; from Mercer, Gloucester, Monmouth, Warren, and Morris Counties, New Jersey.—Explorations of Dr. C. C. ABBOTT, conducted for the Museum.

14694—14696. Arrowheads and scrapers of stone from Trenton, N. J.—Collected and presented by Mrs. ERNEST INGERSOLL, of Jersey City.

14697. Pipe made of ribboned slate very highly polished; a beautiful specimen of aboriginal workmanship, from Trenton, N. J.—Collected and presented by Mrs. JULIA O. ABBOTT.

14698—14702. Rude stone implement from Chester Co., Penn.; shell

beads from Morrisville, Pa.; bone implement from Palatine Bridge, N. Y.; stone implements from Beardstown, Ill., part of the lot of 1000 found by Dr. J. E. Snyder;³ stone hoe, showing marks of use, from Brandenburg, Ky.—Presented by Dr. C. C. ABBOTT of Trenton, N. J.

14708. Stone hoe from Evansville, Indiana.—Collected by Mrs. WHITNEY and presented by her through Dr. C. C. ABBOTT.

14704. Sandals made of braided straw from Hong Kong, China.—Presented by Mrs. F. W. PUTNAM of Cambridge.

14705—14716. Rude stone implements and pebbles, one of which shows marks of probable glacial scratching, from the surface, Trenton, N. J.; jasper flakes and cores found buried in a meadow near the same place; rude stone implement from the gravel drift and another from the surface at Big Timber Creek, Salem Co., N. J.; stone knives from Passaic, N. J.; stone flakes from a shellheap on West Creek, Monmouth County, N. J.; and cast of a stone pipe found at Lewes, Delaware, and now in the possession of Dr. S. S. Haldeman.—Presented by Dr. C. C. ABBOTT.

14717. Photograph of a grooved stone axe.—Presented by Mr. A. F. BERLIN of Reading, Penn.

14718. Twelve photographs of Indians of Chill.—Presented by Count L. F. POURTALES of Cambridge.

14719. Photograph of a shell disk found in a mound in Southeast Missouri, interesting from its resemblance to certain ancient Mexican drawings.—Presented by Mr. A. J. CONANT of St. Louis.

14720—14722. Blanket, white and brown with black stripes, made by the Navajo Indians, and two belts, with figures in red and white, made by the Pimo Indians.—Collected and presented by the Hon. JOHN R. BARTLETT, Providence, R. I.

14723—14727. Cup and saucer of black pottery and three flower pots, white ground with black lines, made by the Pueblo Indians of New Mexico.—Collected by Mr. W. P. MCCLURE and presented by Mr. A. H. THOMPSON of Topeka, Kansas.

14728—14734. Seven human crania from an ancient cemetery on the Bay of Chacota, Peru, being a part of the collection described by Mr. Blake in the 11th Annual Report, p. 277.—Collected and presented by Mr. JOHN H. BLAKE of Boston.

14735—14754. Shells, flint arrowheads and flakes, charcoal and fragments of pottery from Cahokia Mound, Illinois; fragments of ancient pottery and various articles of modern manufacture from a small mound in the same neighborhood; stone celts, hoes, spearpoints, and arrowheads from the surface between the Cahokia and Monks' Mounds, all situated on the river bottom opposite St. Louis.—Collected and presented by the CURATOR.

14755—14756. Rude flint implements from the surface near Sedalia, and a flint arrowhead from Allenton, Mo.—Presented by Dr. GEO. J. ENGELMANN of St. Louis, Mo.

³ See Smithsonian Report for 1876, p. 433.

14757—14944. Fragments of soapstone pots, in different stages of completion, and the stone implements used in their manufacture, found in the original quarry;⁴ stone mortars, pestles, comalls, bowls, and pots; pipes, perforated stones of various sizes and shapes, knives, daggers, scrapers, and arrowheads of stone; sharpening and polishing stones; whistles, daggers and awls of bone; teeth of animals; beads, fish-hooks and ornaments of shell; beads of stone, brass and glass; arrowheads and spearpoints of black flint; paint, and paint pots of stone and bone; human crania and bones; and a stone painted in red and white circles: all from graves and shellheaps on Santa Catalina Island, off the coast of California. In addition to the articles mentioned above, there is also a large collection of water-tight baskets, and another of clay vessels, such as are now made by the Indians of Southern California.⁵—Explorations conducted for the Museum by Mr PAUL SCHUMACHER.

14945. A stone fish 234^{mm} long, and 65^{mm} broad just back of the dorsal fin, perforation through the tail, from Salem Neck.—By PURCHASE.

14946—14949. Stone arrowheads and knives from West Chester, Penn.—Collected and presented by Mr. H. R. KENNY.

14950—14983. Fragments of pottery; stone arrowheads, spearpoints, knives, drills, scrapers, etc., from Piedmont, South Carolina.—By PURCHASE.

14984—15059. A collection of pottery, consisting of seventy pieces, of the typical forms found in Southeast Missouri; an earthen pipe, stone hoes, and shell beads from the same locality.—By PURCHASE.

15060—15208. Earthen bowls, jars, and vases of different forms and colors, some with painted designs and others ornamented with grotesque human and animal forms; celts, mullers, spearpoints, knives, and disk of stone; beads of glass, stone, and pottery; small human and animal figures in stone and terra cotta; chips and knives of obsidian; all from the Island of Zapatero in Lake Nicaragua and from Nandalme, Jinotepec, Teustepe, Diriamba, and other places on the shores of the Lake; flint knife, perforated shells, and three human crania with other human bones from the cave of Cucirizua; fragments of vases, flint chips and cores, stone celts, and different kinds of shells from a mound at La Virgen, Nicaragua.—Explorations conducted for the Museum by Dr. EARL FLINT.

15209. Fragment of a large terra cotta vase, showing human face surmounted by a bird's head.—Collected by Gov. F. P. BARLEN, of British Honduras and presented by Dr. AUG. LE PLONGEON, through Mr. Stephen Salisbury, Jr., of Worcester.

15210. Earthen bowl in human shape from a stone grave near Nashville, Tenn.—Collected and presented by Mr. GILSON of Boston.

15211—15266. Fifteen human crania and several leg bones, among them a femur showing a fracture and the subsequent overlapping and union of the parts; thirteen earthen pots and vases of the usual variety

⁴ For a special account of several of these articles see the paper by Mr. Schumacher in the 11th Report. p. 238.

⁵ See the paper by Mr. Schumacher on a following page.

of forms; disks of shell, stone, and terra cotta; shell and earthen beads; shell spoons; flint dagger; stone tablet, drills, celts, knives, arrowheads, and spearpoints of flint, from stone graves and on the surface in Cain's field near Nashville, Tenn.—Collected by Mr. E. CURTISS in continuation of explorations by the CURATOR.

15267—15317. Twenty-four crania from Maul, Sandwich Islands; two of Negroes from Africa, one of a Hindoo, seven of North American Indians, and several casts; stone celts from Nashville, Tenn., New Mexico, Massachusetts, and the Sandwich Islands; Tobacco pouch, and a garment of striped cloth made by the Mandingo tribe of Africans; an iron pointed spear, shawl, and mats made by the Fans in Central Africa, collected by Mr. P. F. Du Chaillu.—Collected and presented by Dr. S. KNEELAND of Boston.

15318—15333. War club, cannibal's fork, woman's comb and ear-ring, flute, musical pipes, earthen drinking vessel, *liku*, a garment worn by women, and specimens of twine and *tapa*, or native cloth, from the Fiji Islands; stone celt from Oahn, Sandwich Islands.—Collected and presented by Mr. CHARLES DERBY of Salem, Mass.

15334—15371. A jar, glazed on the inside and around the mouth, probably of Spanish manufacture; stone celts, scraper, arrowheads, knives; flint chips and broken stone implements; fragments of pottery stamped, incised, and cord marked, some painted, and one showing two or more layers of clay; fragments of human crania and other human bones from burial mound on an island in Santa Fé Lake, Florida, and other mounds on the shores of the same lake and at Orange Point, Hickory Pond, and Cade's Pond, Florida.—Explorations conducted for the Museum by Mr. HENRY GILLMAN.

15372—15377. Spearpoints, arrowheads and chips of flint from Albany, Georgia; handle of jar in terra cotta, and fragments of stamped pottery from a shell mound on Halifax Inlet, East Florida.—Collected and presented by Mr. S. C. CLARKE.

15378. Cranium of an Indian from G. A. Tapley's farm near Revere Beach, Mass.—Collected and presented by Mr. A. A. TAPLEY, Revere, Mass.

15379—15384. Basket and matting made of the inner bark of the cedar; fishhooks, and a fishing line made of kelp, from Puget Sound.—Collected and presented by Dr. DAVID MACK of Belmont, Mass.

15385—15397. Grooved stone axe, hammerstone, stone celt, pestle, sinker, spearpoints, and arrowheads; fragments of pottery, incised and cord marked, from Delaware Water Gap, Penn.—Collected by Mr. L. W. BRODHEAD of that place, and presented by him through the Hon. ROBERT C. WINTHROP.

15398—15816. This collection is composed almost exclusively of articles found within the limits of the United States, and chiefly in the Ohio Valley. It is especially rich in stone pipes, twenty of which are of aboriginal workmanship, and in stone ornaments polished and perforated, of which there are thirty-three specimens that are perfect. Besides these

there are thirty-two grooved stone axes, thirty-one celts and gouges, and some hundreds of knives, mullers, pestles, scrapers, disks, arrowheads, and spearpoints of the patterns common in the Ohio Valley, with here and there a form that is new. It also includes copper beads from a mound near Newark, Ohio, and a celt of the same material from Lewiston, Maine; several implements of hematite and specular iron ore more or less highly polished, from the Ohio Valley; fifteen vessels of pottery from Southeast Missouri, West Virginia, a mound on Massie's Creek, near Xenia, Ohio, Henderson, Ky., and from different places in Indiana. Among the articles from mounds near Xenia and Newark, Ohio, are three pipes and several stone implements of special interest. There are also stone pipes from Canada; a perforated stone axe from Denmark; shell fishhooks and a native hair brush from the Fiji Islands.—By PURCHASE from WM. CLOGSTON.

15817—16030. Thirty human crania; fifty specimens of pottery, including pots, bottles, bowls, jars, etc., some plain, some ornamented, and others painted or moulded into human, fish, frog, and bird forms; beads, spoons, plain and carved disks of shell; bone combs; stopples, disks and beads of pottery; spindle whorls, disks and celts of stone, flint daggers, knives, arrowheads and spearpoints; "chungke" and sharpening stones, all from stone graves at Old Town, Williamson Co., Tennessee. Six stone hoes, a disk, "chungke" stone, and other implements also of stone from the farm of Mr. BANKS LINK in Humphreys Co., Tennessee.—Collected by Mr. E. CURTISS, in continuation of the Exploration of Tennessee by the CURATOR, conducted for the Museum.

16031. An iron-pointed Comanche arrow from Texas, taken from a human body.—Collected and presented by Mr. JOHN ALLEN WARE of Longview, Texas.

16032. Small celt of serpentine.—Presented by the Hon. ROBERT C. WINTHROP of Boston.

16033. Amulet from Egypt.—Presented by Mr. WILLIAM JOHN POTTS of Camden, N. J.

16034—16037. Earthen spool, piece of a bronze blade, fragments of pottery and mosaic work in marble from the ruins of Mycenæ.—Collected and presented by Mr. ALFRED W. CARR of Cambridge.

16038—16043. A bridle and pair of spurs, modern Peruvian; hobble for horses from Uruguay; saddle, lariat and bridle bit from Mexico.—Collected and presented by Mr. THOMAS G. CARY of Cambridge.

16044—16070. Stone pestle from Lake George, New York; grooved stone axe from Lynn, Mass.; stone gouges from Ipswich; grooved stone sinkers from Salem Neck; arrowheads, sinkers, gouges, and seven grooved stone axes from Marblehead, Mass.—By PURCHASE.

16071—16074. Celt, hammers, hoe, and spearpoint, all of stone, from West Rindge, N. H.—Collected and presented by Dr. C. E. WARE, Boston, Mass.

16075—16091. Fragments of steatite pots and the implements of quartz and slate used in making them, found in the quarry four miles from Wash-

ington City. These articles are similar to those found on Santa Catalina Island by Mr. Paul Schumacher, and to those taken from a quarry near Providence by the Curator.—Collected and presented by Mr. ELMER R. REYNOLDS* of Washington.

16092. Cranium of an Indian from an island in the Mississippi River near McGregor, Iowa.—Collected and presented by Mr. HENRY DAVIS of McGregor.

16093—16345. In this collection there are a number of grooved axes, stone celts, pestles, arrowheads, and spearpoints from Greenwich, collected by Dr. E. HOLMES; arrowheads, celts, hammerstones, and a hoe, from Glassboro, collected by Mr. W. H. BRACKETT and Dr. J. D. HERITAGE; stone daggers, arrowheads, and knives from Newark, N. J., collected by Mr. W. T. LOWTHORP; stone knives, drills, scrapers, and ornaments, and fragments of pottery, stamped, incised, and cord and cob marked, from Salem, collected by Mr. ROBINSON. In addition to these there is a large number of specimens from the neighborhood of Trenton, collected by Dr. ABBOTT in person. Summing up the result of his explorations for the year it will be seen that they run through 622 distinct entries in the catalogue and number over 5500 specimens. Among them are 104 "paleolithics," seventy-two grooved stone axes of different sizes and shapes, some highly polished and one "inscribed;" sixty-five celts of various forms and degrees of finish, with arrowheads, scrapers, knives, and the other implements common to this locality by the hundred, both in jasper and in argillite. Of stone ornaments, polished and perforated, there is also a fair representation, including several of the so-called gorgets, axes, a bird, and other forms that are altogether new. Perhaps one of the most interesting discoveries of the year is the "work shop" that was found buried eighteen inches below the surface, and under a tree that was two feet in diameter. It consists of several pecks of chips, cores, and nodules of jasper and quartz, with quantities of broken and unfinished implements of the same material, and several hammerstones, all found mixed together just as it was probably left by the ancient workman.—From the Explorations of Dr. C. C. ABBOTT, conducted for the Museum.

16346. Sixteen stone sinkers notched at sides, found together in one lot, from Trenton, N. J.—Collected and presented by Master RICHARD M. ABBOTT.

16347—16349. Stone knives collected by Dr. E. HOLMES, of Greenwich, Cumberland Co., N. J.; stone ornament, perforation unfinished, and a coil

*A description of this ancient quarry and of the articles here recorded will be found in the following pages of this Report.

¹This name has been given to the rude implements found in the drift at Trenton. In this connection it may not be out of place to say that in September last, in company with Prof. J. D. Whitney, of Harvard College, I visited Trenton, and that we were fortunate enough to find several of these implements in place. Prof. Whitney has no doubt as to the antiquity of the drift, and we are both in full accord with Dr. Abbott as to the artificial character of many of these implements.—LUCIEN CAER, Assistant Curator Peabody Museum.

of clay, probably the beginning of an earthen jar, from Trenton.—Collected and presented by Dr. C. C. ABBOTT.

16350. Human arm, with wrist and fingers tattooed, from Ancon, Peru.—Collected by the late Prof. LOUIS AGASSIZ, during the Hassler Expedition, and presented by the MUSEUM OF COMPARATIVE ZOOLOGY.

16351—16369. Small stone pot, small disk of gold, sixteen earthen vases of different patterns, some painted, and one in animal form, from Tiahuanaco, Lake Titicaca. Also two inscribed stones found near Arequipa, Peru.—Collected and presented by Mr. E. A. FLINT of Boston.

16370. Glass beads and fragment of human cranium from an Indian grave at West Chester, Penn.—Collected and presented by Mr. JEROME B. GRAY.

16371—16374. Stone celts from the Sandwich Islands, and a small basket used by the Indians of the Yo Semite Valley, in which to keep worm bait alive.—Collected and presented by Dr. S. KNEELAND, Boston.

16375—16721. Stone implements, arrowheads, knives, scrapers, grooved axes and spearpoints, of the various patterns usually found in New Jersey and the Ohio Valley; cranium of Seminole Indian and fragments of human and animal bones from shellmounds in Florida; small human figure in terra cotta from Mexico; tweezers and fragment of ornament in copper and a monkey's head in pottery from Peru; earthen lamp, vase and faces (Athene), glass tear vessel from Greece; four lamps in terra cotta from Tyre, and fragments of glass and glazed pottery from the ruins of Baalbec, Syria; earthen lamps and vases, glass tear vessel, a bronze greave, and other implements and weapons of bronze and iron from different places in Italy; earthen lamp and human figure and a tear vessel of glass from Arles, France; rude stone implements—paleolithics—from Abbeville; stone celt from Nice, bronze celt from Brittany, and flint core and flakes, stone celt and beads, fragment of a bronze blade, and a beautiful bronze celt, all dredged from the Seine at Paris, France; stone celts and arrowheads from the Giant's Causeway, and celts and spearpoints of bronze from the River Boyne, Ireland; bronze bracelets, spearpoints, bangles, celts, pin, and reaping hook from prehistoric stations in Austria; a choice collection of specimens, twenty-five in number, illustrative of the stone and bronze ages of Sweden and Denmark; mummied birds and young crocodiles, feet and hands of human mummies, and fragments of cloth in which they were wrapped. earthen lamps and several small vessels of the same material, human and animal figures in wood, and a series of fifty amulets, five bead necklaces, and numerous ornaments made in pottery, and painted scarabæi in stone and terra cotta, alabaster vase in the shape of a kneeling human figure, and several fragments of stone statues, some of them with hieroglyphics inscribed on them, all from Egypt. In addition to this very handsome collection there is a large number of specimens from the Swiss lakes, but chiefly from Lake Bièvre. Among these are forty-three stone celts, and numerous knives, six of which are mounted in horn handles, flint flakes, hammers, spindle whorls, and other implements of stone; bone daggers and needles, awls, celts and perfor-

ated ornaments of the same material; a ring, vase and spindle whorls of pottery; numerous specimens of teeth and bones of animals, etc., bones of birds and many other articles of use and ornament such as are usually found on the sites of the ancient Lake Dwellers. From Lake Bourget, Aix Les Bains, there are horn sockets, beads and spindle whorls of pottery, stone implements, and pins, fish-hooks, and vases of bronze. The entire collection, a gift from Mr. Clarence B. Moore, of Philadelphia, (Harvard '73), comprises 846 entries, and consists of specimens drawn literally from the four quarters of the globe; in point of time it has representatives from the rude stone implements of France, all the way down through the successive ages of polished stone and bronze to the time of iron in the comparatively recent past. Covering such a vast extent of country and extending through all the earliest periods of the growth of the human race it forms a small Museum in itself and is of special value for purposes of comparison.—Collected and presented by Mr. CLARENCE B. MOORE of Philadelphia.

16722—16730. Fragments of pottery and stone arrowheads from an island in Lake Mendota, Wis.; a perforated humerus, and other human and animal bones, with fragments of pottery from a mound near the same lake.—By PURCHASE.

16731—16744. Stone celt, horn sockets, fragments of pottery and animal bones from the lake dwellings at Concise, Switzerland; small earthen vases from Pæstum, Italy; shells and pieces of mosaic and glass from the Sybil's Cave at Cumæ, and from Rome, Italy; arrowheads and spear-points of quartz from Washington City, D. C.—Collected and presented by COUNT L. F. POURTALES of Cambridge.

16745—16801. Fibres of different plants with cloth and garments made from them; head-dresses, belts, necklaces, and other ornaments made of feathers; whistle, flute, bracelet, and necklace of bone; baskets, paddles, wooden mortar, and mandico graters; arrows with cane, iron and bone points, some poisoned; zarabatana, or blow gun, with a quiver of poisoned arrows and a package of woorara poison, all from the Amazon River, and such as used by the present Indians.—Collected by the Thayer Expedition under the direction of the late Prof. LOUIS AGASSIZ, and presented by the MUSEUM OF COMPARATIVE ZOOLOGY.

16802—16808. Fragments of pottery and stone chips from a rock shelter at Hudson, Ohio.—Collected and presented by Mr. M. C. READ.

16804. An obsidian arrowhead from the valley of San Juan, New Mexico.—Collected and presented by Mr. CHARLES ALDRICH.

16805. Old Spanish olive jars for comparison.—By PURCHASE.

16806—17163. This exceedingly valuable collection, made on Omotepec Island, Lake Nicaragua, from a mound at Tola and at other points on the shores of the same lake, consists in part of forty burial jars, some of them exceedingly small, others very large; about two hundred and thirty other articles of pottery in different colored clays, some plain, some painted, whilst others are ornamented with mouldings of grotesque heads and figures, and several are fine pieces of incised work. Among them are

found a great many different patterns of jars, bowls, and vases executed in such a manner as to give a good idea of the high development reached in the ceramic art by this ancient nation. Some of the forms are easy and graceful, while in plastic ornamentation the taste of the ancient potters seems to have been often towards the grotesque. In addition to these articles in terra cotta, there are beads of stone, bone, and shell; celts, pestle, sinkers, and mullers of stone; three large stone metates, one ornamented with an animal's head and the other with bird's heads; human and animal bones; spindle whorls, whistles, and stands in terra cotta; flint scrapers and knives, grinding stones, a knife of jade, and flakes of obsidian from different places on Omotepec Island and along Lake Nicaragua. — Exploration of Dr. EARL FLINT conducted for the Museum.

17164—17177. Flint arrowheads, spearpoints, drills, knives, and scrapers, of the forms usually found south of the Ohio, from Bales' Mills, Lee County, Va. — Collected and presented by Mr. J. H. BALKS.

17178—17205. Calvarium from a rock house near Plueville, Ky., and one from a cave in Lee County, Va.; human bones, grooved axe, and stone celt, "chungke" stone, arrowheads, spearpoints, and knives of flint; ring of steatite, piece of hematite, and a small disk of pottery, from Lee County, Va. — Exploration conducted for the Museum, by Mr. CHARLES B. JOHNSON of Gibson's Station, Lee County, Va.

Additions to the Library.

From the Author. Pseudis, by S. W. Garman, Cambridge. Pamphlet. 1877.

From the Academy of Natural Sciences, Davenport, Iowa. Lithograph of a Stone Tablet recently discovered in the neighborhood of Davenport.

From the Society. Thirty-fifth Report on the Archæology of Schleswig-Holstein, by Heinrich Handelsmann, with wood cuts. Pamphlet. 1878.

From the Society. Proceedings of the Archæological Society of Athens, Greece, from January 1877 to January 1878. Pamphlet. Athens, 1878.

From the Hon. Robert C. Winthrop. Explorations across the great Basin of Utah, in 1859, by Capt. J. H. Simpson, Corps of Top. Eng., U. S. Army, Washington, 1876. 1 vol., 4to, pp. 495. Recent Archæological Discoveries in the American Bottom, by Henry R. Howland. Pamphlet, 8vo, 7 pp. Buffalo, 1877. A lithographic portrait of George Peabody, the founder of the Museum.

From the Trustees of the Peabody Education Fund. A bronze medal struck in honor of George Peabody. On the obverse is the head of Mr. Peabody, with the words, "George Peabody, born 18 Feb., 1795 — died 4 Nov., 1869." On the reverse is the inscription, "Education — a debt due from present to future generations," and also, in somewhat smaller characters, "The Trustees of the Peabody Education Fund."

From the Hon. A. H. H. Stuart, through Hon. Robert C. Winthrop. Man's Age in the World, by James C. Southall, A. M., with introductory remarks by Hon. A. H. H. Stuart, Rector; an address delivered

at the opening of the Lewis Brooks Museum, at the University of Virginia, June 27, 1878. 1 vol., 8vo, pp. 58. Richmond, Va., 1878.

From the Academy. The Transactions of the Academy of Science of St. Louis. Vol. III, No. 4. 1878.

From Prof. Henry Ward Pool. Silabario de Idioma Mexicano por el lic. D. Faustino Chimalpopocalt. Pamphlet, 17 pp. Mexico, 1849.

By Purchase. Cuadro descriptivo y comparativo de las Lenguas Indígenas de México, por D. Francisco Pimentel. 2 vols., 8vo. Mexico, 1862-5. The Scandinavian Races, by Paul C. Sinding. 1 vol., 8vo, pp. 493. New York, 1878.

From the Society. Annual Report of the Minnesota Historical Society, for the year 1877. Pamphlet, 8vo, 24 pp. Proceedings of the Minnesota Historical Society, from Nov., 1849, to May 11, 1858. Pamphlet, 21 pp. The Sixth Annual Report of the Geological and Natural History Survey of Minnesota, for the year 1877. 1 vol., 8vo, pp. 225.

From the Author. Report on the Geographical and Geological Survey of the Rocky Mountain Region. Outlines of the Philosophy of the North American Indians, by Major J. W. Powell, Washington City. 2 pamphlets, 8vo. 1877.

From the Author. Ancient Earthworks in Northern Ohio, by Col. Charles Whittlesey. Pamphlet, 8vo, 7 pp. 1878.

From the Department of the Interior. Ninth Annual Report of the United States Geological and Geographical Survey of the Territories, embracing Colorado and parts of adjacent Territories, being a report of the progress for the year 1875, by F. V. Hayden, United States Geologist. 1 vol., 8 vo, pp. 827. Monograph of North American Rodentia, by Cues and Allen; being Vol. XI, of the United States Geological Survey, F. V. Hayden, Geologist in charge. 1 vol., 4to, pp. 1091. 1877. Nos. 3 and 4 of Vol. III, 1877, and No. 1 of Vol. IV, 1878, Bulletins United States Geological and Geographical Survey of the Territories, F. V. Hayden, U. S. Geologist in charge. Ethnology and Philology of the Hidatsa Indians, by Washington Matthews, Assistant Surgeon U. S. Army, being No. 7 of the miscellaneous publications of the U. S. Geological and Geographical Survey, F. V. Hayden, U. S. Geologist in charge. 1 vol., 8vo. 1877. Tertiary Flora, by Leo Lesquereux, being Vol. VII, of U. S. Geological Survey of the Territories, F. V. Hayden, Geologist in charge. 1 vol., 4to, pp. 366, 65 plates. 1878. Contributions to North American Ethnology. Vols. I and IV, 4to, of the publications of the U. S. Geol. and Geog. Survey of the Rocky Mountain Region. J. W. Powell in charge. 1876-7. Map of the United States and Territories, compiled from the official surveys and other authentic sources, under the direction of the Hon. J. A. Williamson, Commissioner, 1877.

From the Academy. Proceedings of the Davenport Academy of Natural Sciences. Vol. II, part 1. 1877.

From the Society. Beiträge zur Anthropologie und Urgeschichte Bayerns, organ der Münchener Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. Zweiter Band, 1, 2, 3 Heft. München, 1878.

From Prof. William Everett. Traditions of Decoodah, and Antiquarian Researches, by William Pidgeon. 1 vol., 8vo, 334 pp. New York, 1853.

From the Author. Vortrag über den Mexicanischen Calender-stein, gehalten von Prof. Ph. Valentini, 30 April, 1878, in Republican Hall, New York City, vor dem Deutsch ges Wissenschaftlichen Verein. Pamphlet, 32 pp., 8vo. 1878.

From the Museum. Eighth Annual Report of the Metropolitan Museum of Art, New York. Pamphlet, 85 pp. 1878.

From the Society. Annual Address of Chief Justice Daly, LL. D., President of the American Geographical Society, on the Geographical Work of the World, for 1877. New York. Pamphlet, 8vo, 76 pp. 1878.

From the Society. Reports and Communications to the Cambridge Antiquarian Society, Nos. XVII and XIX, being No. 8 of Vol. III, and No. 1 of Vol. IV. An Annotated list of Books printed on Vellum, to be found in the University and College libraries at Cambridge, England, by Samuel Sanders, M. A., of Trinity College. Pamphlet, 8vo. Cambridge and London. 1878.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool. No. XXXI, 1 vol., 8vo, pp. 423. London and Liverpool, 1877.

From the Association. Proceedings of the Central Ohio Scientific Association, at Urbana, Ohio. Vol. I, part 1. 1878.

From the Academy. Annual Report of the Chicago Academy of Sciences for 1878. Pamphlet.

From the Museum. The Illinois State Historical Library and Natural History Museum. Pamphlet. Springfield, 1877.

From Principal J. W. Dawson, Montreal. The Leisure Hour, for 1874, bound. 1 vol. Continuing his series of Archæological papers.

From W. Wallace Tooker, Sag Harbor, N. Y. The Legends of Montauk, by J. A. Ayres, with an Historical Appendix. Hartford, 1849. 1 vol., 8vo, pp. 127.

From the Academy. Proceedings of the California Academy of Sciences. Vol. VI, and Part 1 of Vol. VII. San Francisco. 1876-7.

From the Society. Journal of the Cincinnati Society of Natural History. Vol. I, Part 2. July, 1878.

From the Author. Promenade Onomatologique sur les bords du Lac Léman. Berne, 1867. Indian Languages of the Pacific States and Territories. New York, 1867. Analytical Reports upon Indian Dialects spoken in Southern California. Washington, 1876. Remarks upon the Tónkawa Language. Philadelphia, 1876. The Timucua Language, and Sequel. Philadelphia, 1877-8. Five pamphlets by Albert S. Gatschet, Washington City, D. C.

From the Society. Proceedings of the American Antiquarian Society. No. 71. Worcester, 1878.

From Prof. John Robinson, Salem. Journal of the Shanghai Literary and Scientific Society. No. 1, for June, 1858.

From the Museum. The Seventh Annual Report of the Curators of the

Museum of Wesleyan University, including a visitor's guide to the Museum. Pamphlet, pp. 24. 1878.

From the Author. Poetical Works, by Levi Bishop. 1 vol., 8vo, p. 547, Detroit, 1876.

From the Society. Baltische Studien. Herausgegeben von der Gesellschaft für Pommersche Geschichte und Alterthumskunde. Parts 1, 2, 3 4, 5. Vol. XXVIII. Stettin. 1877.

From the Author. Aboriginal Structures in Georgia, by Charles C. Jones, Jr. Pamphlet, 13 pp. Washington, 1878.

From the Board of Agriculture. The 22nd Annual Report of the Maine Board of Agriculture for 1877. 1 vol., 8vo, pp. 328.

From the Editor. The American Antiquarian. Vol. I, No. 2. Edited by Rev. S. D. Peet. Cleveland, Ohio 1878.

From the Society. Archivio per l' Antropologia e la Etnologia. Organo della Società Italiana di Antropologia, Etnologia e Psicologia comparata, Firenze, Italy. Ottavo volume, Fascicolo secondo. 8vo, 1878.

From the Museum. Annual Report of the Curator of the Museum of Comparative Zoology at Harvard College, for 1877-78. Bulletins Nos. 8 and 9. Vol. V, Cambridge, Mass. 1878.

From the Smithsonian Institution. Report for 1877. 1 vol., 8vo, pp. 500. Washington, D. C. 1878.

From Thomas G. Cary, Esq., Cambridge, Mass. Recuerdos de la Campaña de Buenos Ayres. 1 vol., folio. Japanese Sketches of Costumes and Scenes. 2 vols. A series of outline maps.

From Count L. F. Pourtales. Monuments de l' Ancien Évêché de Bale. Par A. Quiquerez. 1 vol., 8vo, pp. 427, with plates and maps. 1864.

From the Author. Origin of the Chinese Race, Japanese Wrecks on the North Pacific, Early Maritime Intercourse of the Ancient Western Nations, three pamphlets by Charles W. Brooks, Esq., San Francisco. 1876.

From William John Potts, Esq., Camden, New Jersey. Catalogue of Human Crania in the Collection of the Academy of Natural Sciences. Philadelphia, by J. Altkin Meigs. 8vo, pamph., 1857. North American Medico-Chirurgical Review for Sept., 1861. Map of the Delaware River, with location of Indian Tribes, from Reminiscences of Old Gloucester. Map of Pennsylvania and West Jersey—a fac-simile of map accompanying Gabriel Thomas' History of Pennsylvania and New Jersey. Ed. 1848.

From the Imperial University of Tokio. Twenty-two volumes, containing illustrations and text, Ancient Customs and Costumes of the Japanese.

From the Author. A Handbook of Boston, by Moses Klug. 1 vol., 8vo, pp. 292. 1879.

From the Author. Some Early Notices of the Indians of Ohio. To what Race did the Mound Builders belong? Pamphlet by Judge M. F. Force, 8vo, 75 pp. 1879.

From the Author. Relic Hunting on the Mohawk, by S. L. Frey, Palatine Bridge, N. Y. Pamphlet, 9 pp. 1878.

From Prof. H. H. Straight. Report of the State Normal and Training School, at Oswego, New York. 1878.

From the Author. The Native Races of the Pacific Ocean, by William Henry Flower, *Hunterian* Professor of Comparative Anatomy, and Conservator of the Museum of the Royal College of Surgeons of England. Pamphlet, 51 pp. 1878.

From Dr. C. C. Abbott, Trenton. Hybridity in Animals and Plants, by S. G. Morton, M. D., 8vo, pamph., New Haven, 1847. Letter on the Hybridity in Animals, by S. G. Morton, M. D., 8vo, pamph., Charleston, 1850. Additional Observations on Hybridity in Animals, by S. G. Morton, M. D., 8vo, pamph. (no date). The Horse not originally imported from the East, by Francis S. Holmes, with a Letter from Prof. L. Agassiz, 8vo, pamph., Charleston, 1858. Notes on American Geology, by T. A. Conrad, 8vo, pamph. (no date). An Introduction to the Study of Natural History, 12 lectures by Prof. L. Agassiz, 8vo, pamph., New York, 1847. Description of a Deformed fragmentary Human Skull, found at Jerusalem, by J. Altkin Meigs, M. D., 8vo, pamph., Philadelphia, 1859. Catalogue of Human Crania in the Collection of the Academy of Natural Sciences of Philadelphia, by J. Altkin Meigs, M. D., 8vo, pamph., Philadelphia, 1857. Report of the New Jersey Centennial Commissioners. 1 vol., 8vo, pp. 423. 1877.

MEASUREMENTS OF CRANIA FROM CALIFORNIA.

BY LUCIEN CARR, *Assistant Curator.*

IN the following tables the measurements are given of about one hundred and fifty crania of the Indians of the coast and islands of Southern California, obtained, within the past three years, by Mr. Paul Schumacher during his explorations for the Museum.

As I have already furnished you with a paper to accompany your Report to Lt. Wheeler on the Archæological Collections obtained in Southern California by the party acting under his direction, in which I have endeavored to present a full discussion of the results of the measurements here given, combined with an equally large number published by Dr. Otis, Curator of the Army Medical Museum, it is only important, here, to publish full tables of those measurements in order to continue the record of the Crania belonging to the Museum.

In these tables the number of crania measured is given in small figures at the head of each column, and only the skulls of adults have been included. The effort has also been made to place the skulls of males and females in different tables but, of course, with only approximate results.

The metric system is used in all the measurements; the length, breadth, etc. being given in millimetres, and the capacity in cubic centimetres

II. CRANIA FROM SANTA CATALINA ISLAND, CALIFORNIA. FEMALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-zygomatic Length.	Pterion.	Nasal Index.	Gnathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
13231	1068	170	122	119	.717	.700	91	70	48	28	92	86	6-10	53	102	35	37	46	123
13232	1320	180	124	133	.688	.738	90	71	50	26	93	85	8	52	102	36	36	100	120
13237	1115	176	124	116	.704	.659	93	66	49	27	96	98	7-5	55	102	38	39	97	132
13240	1451	189	132	124	.698	.656	96	73	52	25	94	96	7-5	45	102	39	41	95	130
13243	....	179	134	118	.748	.659	91	60	51	25	94	90	..	57	102	34	37	91	128
13245	1323	185	133	129	.718	.697	95	74	52	30	94	96	..	50	100	38	38	100	129
13247	1410	182	135	132	.741	.725	93	77	54	27	98	92	6	54	102	37	40	92	129
13254	1344	178	133	124	.747	.686	90	73	53	29	94	96	6	52	103	35	37	94	129
13257	1258	173	132	116	.763	.670	91	68	51	27	88	90	2-8	52	103	35	37	94	129
13259	1200	184	127	125	.680	.679	92	..	..	..	..	..	10	58	102	37	39	94	130
13286	1243	179	137	129	.704	.720	91	71	53	31	93	94	13	56	102	38	39	100	130
13448	1803	181	133	128	.729	.707	94	74	53	31	94	96	..	56	102	39	39	100	130
Average.	1270	179	130	124	.725	.692	92	70	51	27	93	93	..	53	99	36	38	95	127
Maximum.	1451	189	137	133	.764	.738	96	77	55	31	98	98	..	58	102	39	41	100	130
Minimum.	1068	180	122	116	.688	.656	90	60	48	25	88	86	..	45	102	34	36	92	120
Range.	383	19	15	17	.76	.82	6	17	7	6	10	12	..	10	9	5	5	8	10

III. CRANIA FROM SAN CLEMENTE ISLAND, CALIFORNIA. MALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-alar Length.	Pterion.	Nasal Index.	Gonthic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
13548	1300	124	133	132	.733	.717	89	68	50	27	93	90	.....	54	97	36	41	87	128
13549	1424	140	139	132	.731	.694	85	74	57	26	96	92	14	45	86	35	41	85	140
13550	1747	193	145	133	.751	.689	102	80	56	23	96	93	.....	41	102	43	43	100	144
13551	1417	162	141	129	.774	.708	94	67	53	26	92	86	.....	49	93	33	37	89	128
13557	1456	194	140	133	.731	.783	94	71	57	25	96	90	.....	43	88	39	40	97	139
13558	1621	190	135	134	.710	.705	97	73	55	27	92	90	.....	49	97	37	39	94	135
13561	1316	184	131	130	.739	.704	91	70	52	26	98	100	10-16	50	102	36	39	92	138
13563	1386	179	138	130	.770	.727	96	73	59	27	94	94	9-13	45	100	38	39	87	138
13564	1430	186	139	129	.747	.693	92	..	52	27	88	..	5	51	...	57	39	94	130
Average,	1452	186	137	131	.740	.702	94	71	54	26	93	92		47	97	37	39	92	135
Maximum,	1747	194	145	134	.774	.727	102	80	59	27	98	100		54	102	43	43	100	144
Minimum,	1300	182	131	129	.710	.683	89	67	52	23	88	96		41	93	33	39	85	128
Range,	447	12	14	5	.064	.043	13	13	7	4	10	4		8	9	10	4	15	16

IV. CRANIA FROM SAN CLEMENTE ISLAND, CALIFORNIA. FEMALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-alveolar Length.	Pterion.	Nasal Index.	Gonathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
13546	1352	176	132	128	.750	.737	88	63	49	35	92	86	18-16	51	104	33	33	83	124
13547	1344	179	137	125	.765	.697	92	71	54	31	94	90	17	46	96	36	33	84	125
13548	1346	180	139	122	.758	.685	94	67	53	34	92	90	..	46	97	37	33	100	126
13549	1336	182	136	125	.766	.686	89	67	53	33	92	90	..	46	97	37	33	84	127
13550	.....	190	140	127	.786	....	90	76	53	33	90	86	12	41	96	36	33	87	128
13553	.....	174	133	127	.753	.729	91	69	50	37	90	86	12	54	96	33	37	83	122
Average.	1315	179	135	125	.754	.706	90	68	52	34	92	90		47	97	35	37	88	128
Maximum.	1352	182	140	128	.765	.729	94	76	54	37	94	96		54	104	38	39	100	135
Minimum.	1288	174	132	122	.736	.686	88	62	49	32	90	86		41	96	33	37	86	122
Range.	84	8	8	6	.29	.84	6	14	5	5	4	10		13	9	5	2	14	13

V. CRANIA FROM SANTA CRUZ ISLAND, CALIFORNIA. MALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-alveolar Length.	Pterion.	Nasal Index.	Gonathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
9107	1341	180	134	136	.744	.700	.96	.79	.25	.25	.98	.98	13	45	101	37	39	94	139
9108	1303	176	138	129	.784	.783	.91	.67	.50	.32	.91	.90	13	44	98	35	40	87	135
9114	1144	170	130	130	.764	.764	.96	.72	.50	.35	.98	.98	15	50	102	37	38	97	131
9115	1144	174	140	135	.801	.775	.90	.76	.51	.23	.93	..	15	45	..	37	39	94	133
9117	1345	183	143	142	.781	.775	.90	.75	.49	.22	.93	.94	..	43	101	35	38	97	134
9121	1191	174	137	135	.787	.718	.86	.66	.46	.22	.90	.92	2	47	103	35	38	92	128
9125	1410	180	145	131	.805	.738	.98	.74	.51	.24	.96	.99	..	51	97	35	40	87	129
9126	1469	184	137	133	.744	.777	.95	.73	.52	.27	1.01	.94	..	51	97	35	40	87	129
9127	1316	182	131	132	.719	.725	.89	.73	.51	.27	1.04	1.00	21	52	96	35	40	87	138
9129	1552	180	141	131	.783	.741	.95	.67	.45	.25	.91	.99	13	55	108	35	40	87	138
9132	1355	179	140	131	.782	.731	.93	.74	.53	.25	.96	.92	14	47	95	34	39	87	138
9133	1343	181	145	131	.801	.723	.94	.77	.55	.24	.96	.98	..	45	104	33	41	80	141
9135	1437	182	143	132	.785	.725	.96	.75	.55	.25	.96	1.00	..	41	95	39	39	100	138
9136	1357	178	136	132	.772	.750	.87	.72	.58	.24	.96	.92	10-13	41	102	35	40	87	135
9137	1389	180	135	130	.750	.732	.95	.65	.50	.25	1.00	1.03	26-23	50	102	35	40	87	135
9138	1389	182	132	134	.725	.776	.88	.70	.54	.25	.98	.93	21	46	94	32	36	86	143
9144	1359	180	137	133	.796	.742	.90	.64	.55	.37	.98	.91	13	49	102	34	40	85	136
9145	1414	190	141	132	.742	.704	.94	.70	.52	.35	1.02	1.01	14	50	101	32	34	83	145
9146	1206	180	142	132	.788	.700	.88	.71	.52	.37	.92	.98	14	48	108	32	35	84	134
9148	1420	180	142	132	.788	.733	.88	.70	.52	.37	.92	.98	14	48	108	32	35	84	134
9151	1303	183	136	126	.743	.688	.90	.66	.45	.25	.90	.94	..	46	111	34	38	88	128
9152	1410	181	144	131	.736	.723	.87	.66	.50	.26	.96	.96	15	52	100	33	36	92	136
9154	1289	179	131	127	.731	.709	.90	.74	.53	.36	.96	.96	..	46	106	33	36	92	136
9156	1341	175	140	135	.800	.754	.86	.70	.53	.36	.96	.96	..	46	106	33	36	92	136
9161	1420	179	144	132	.804	.787	.89	.70	.51	.37	1.03	1.03	13	47	109	33	36	94	138
9163	1363	181	136	126	.751	.723	.96	.68	.47	.26	.96	.96	..	46	106	33	36	92	136
9164	1190	172	132	126	.706	.723	.87	.68	.47	.26	.96	.96	..	46	106	33	36	92	136
9168	1271	171	138	130	.807	.754	.87	.68	.46	.26	.96	.96	16	50	104	34	37	91	133
9169	1270	173	143	130	.807	.754	.87	.68	.46	.26	.96	.96	16	50	104	34	37	91	133
9170	1265	175	138	134	.764	.732	.87	.63	.46	.26	.96	.96	18-14	54	108	33	35	94	124
9173	1623	178	145	145	.814	.765	.91	.63	.40	.26	.98	.98	10	49	107	36	39	100	146

TABLE V CONTINUED.

9177	1144	166	129	137	.777	.765	88	64	43	25	86	92	11	58	101	95	35	100	125
9179	1247	173	139	129	.908	.750	84	70	49	37	92	96	13	55	104	35	35	100	130
9180	1282	176	136	128	.773	.727	90	62	47	36	92	96	13	55	106	34	38	89	126
9181	1380	178	141	134	.799	.752	88	71	51	25	94	98	15	49	104	34	40	85	141
9183	1497	181	151	138	.854	.768	98	73	53	25	94	98	..	52	104	35	44	79	143
9184	1407	177	137	136	.774	.724	95	72	52	25	98	104	11	48	106	36	39	92	136
9185	1257	174	135	126	.775	.724	96	66	50	28	96	104	14	50	106	36	37	94	136
9186	1362	180	136	137	.785	.761	88	79	54	28	99	104	12	51	105	31	37	83	140
9187	1451	182	140	136	.760	.747	91	69	50	28	100	100	..	56	100	38	40	85	139
9188	1379	182	138	138	.768	.758	91	74	56	26	94	94	..	46	100	35	38	92	140
9189	....	179	138	....	.770	....	86	69	54	25	..	..	..	46	100	36	40	90	138
9191	1386	179	141	138	.787	.737	90	65	49	23	96	96	18	46	102	33	37	89	139
Average,	1305	178	138	138	.776	.741	90	69	51	25	92	97		49	101	85	38	91	135
Maximum,	1625	190	151	145	.885	.814	98	79	58	29	101	106		62	111	89	44	100	146
Minimum,	1144	166	129	125	.719	.688	83	62	43	23	88	98		41	94	81	35	80	124
Range,	481	24	22	20	.116	.126	15	17	15	7	16	18		21	17	8	9	20	22

VI. CRANIA FROM SANTA CRUZ ISLAND, CALIFORNIA. FEMALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Zygomatic.	Length of Nose.	Breadth of Nose.	Basal Length.	Basal Breadth.	Pterion.	Nasal Index.	Gonathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
9106	1190	172	137	123	796	715	67	47	92	88	98	13	46	104	31	31	100	122
9111	1351	177	139	136	785	768	45	45	92	101	98	13	46	104	31	31	100	122
9113	1650	181	152	136	819	785	66	45	92	101	98	13	46	104	31	31	100	122
9116	1144	168	133	128	773	701	63	46	91	90	92	13	47	103	34	36	91	123
9118	1257	180	133	129	781	783	68	46	91	90	92	13	47	103	34	36	91	123
9119	1178	175	143	140	797	783	72	46	91	90	92	13	47	103	34	36	91	123
9120	1129	177	143	140	797	783	72	46	91	90	92	13	47	103	34	36	91	123
9122	1252	179	133	135	788	717	67	46	91	90	92	13	47	103	34	36	91	123
9124	1310	178	139	137	788	717	67	46	91	90	92	13	47	103	34	36	91	123
9125	1156	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9126	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9127	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9128	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9129	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9130	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9131	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9132	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9133	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9134	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9135	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9136	1146	170	130	127	787	717	67	46	91	90	92	13	47	103	34	36	91	123
9137	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9138	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9139	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9140	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9141	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9142	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9143	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9144	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9145	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9146	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9147	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9148	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9149	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9150	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9151	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9152	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9153	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9154	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9155	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9156	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9157	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9158	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9159	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9160	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9161	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9162	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9163	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9164	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9165	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9166	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9167	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9168	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9169	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9170	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9171	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9172	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9173	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9174	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9175	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9176	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9177	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9178	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9179	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9180	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9181	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9182	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9183	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9184	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9185	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9186	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9187	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9188	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9189	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9190	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9191	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
9192	1074	168	136	128	781	735	60	43	94	96	91	10	46	104	34	36	91	123
Average,	1319	172	134	128	778	748	65	46	93	91	98	13	48	101	34	36	93	126
Maximum,	1528	182	145	140	835	833	77	51	96	103	100	13	48	106	39	40	100	143
Minimum,	1010	158	123	122	719	683	60	41	90	82	90	13	44	98	31	31	90	120
Range,	488	24	22	18	116	150	17	10	6	20	20	13	4	13</				

VII. CRANIA FROM THE SANTA BARBARA ISLANDS AND MAINLAND NEAR SANTA BARBARA, CAL. MALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-nasal Length.	Ptericon.	Nasal Index.	Gonathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
9193	1393	190	134	130	.795	.747	96	74	53	34	98	104	18-12	45	106	34	40	85	136
9194	1383	176	140	131	.795	.744	96	71	51	32	90	94	.....	47	104	35	40	87	136
9195	1401	178	140	130	.795	.740	96	70	51	34	100	104	.....	45	104	35	39	80	140
9196	1441	178	141	130	.792	.730	92	75	51	33	100	96	22-17	41	95	35	41	85	139
9200	1248	174	138	128	.783	.735	92	70	51	33	94	102	15-13	45	102	37	39	84	139
9202	1358	180	141	138	.781	.736	92	70	51	33	92	104	.....	40	104	36	39	80	136
9204	1167	179	126	124	.793	.731	94	70	49	36	92	102	.....	53	103	35	37	89	124
9205	1301	181	125	123	.684	.683	84	66	47	36	96	104	.....	53	108	34	37	91	124
9207	1216	173	134	130	.774	.751	89	66	46	24	92	94	11	52	103	32	36	90	...
Average.	1324	178	136	131	.760	.733	89	70	50	34	95	98		48	103	34	38	88	134
Maximum.	1441	190	141	139	.795	.740	96	75	53	38	100	104		53	108	37	41	94	140
Minimum.	1167	173	126	122	.684	.683	84	65	46	2	90	94		41	95	33	37	85	124
Range.	274	17	15	17	.111	.136	15	10	9	6	10	10		14	13	4	4	9	16

VIII. CRANIA FROM THE SANTA BARBARA ISLANDS AND MAINLAND NEAR SANTA BARBARA, CAL. FEMALES.

Museum Number.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Length of Face.	Length of Nose.	Breadth of Nose.	Basal-nasal Length.	Basal-nasal Length.	Ptericon.	Nasal Index.	Gonathic Index.	Height of Orbit.	Width of Orbit.	Orbital Index.	Zygomatic Diameter.
9197	1313	178	140	136	.816	.793	94	68	51	35	90	98	6	49	97	38	38	94	127
9198	1316	164	137	130	.815	.777	90	64	47	32	88	86	.....	46	97	37	36	87	130
9199	1267	171	132	132	.771	.745	93	66	45	31	92	86	.....	53	93	35	39	89	137
9203	1175	172	136	130	.792	.737	90	66	45	31	90	86	11-6	54	101	35	36	91	124
9205	1306	174	134	136	.770	.734	90	66	51	35	94	98	.....	54	104	34	36	94	127
Average.	1247	171	135	135	.782	.754	86	68	48	25	90	86		51	97	35	37	88	127
Maximum.	1316	174	140	136	.815	.777	90	66	51	34	94	98		54	104	37	39	97	130
Minimum.	1175	166	130	126	.732	.733	90	59	45	22	88	86		46	93	33	35	89	124
Range.	141	8	14	9	.083	.040	10	7	6	0	6	12		8	11	4	3	8	6

FLINT CHIPS.

BY CHARLES C. ABBOTT, M. D.

UNDER this general term may be considered the various flakes, splinters, chips, cores, and all such refuse of those minerals that have been used in the manufacture of chipped implements, as knives, scrapers, spearheads, arrowpoints, and drills or perforators. Wherever any of these or allied forms of finished implements occur it is usual to find chance specimens of this refuse material, and, when thus met with, they have, I think, much more archæological significance than is generally supposed, but to this, I will refer, hereafter. When, however, vast quantities of such chippings occur, in a very limited area, they indicate, without doubt, that at such a locality the various forms of weapons and implements were there made in quantities, and, doubtlessly, by a system of trade¹ among adjoining tribes, were in time dispersed over a large extent of country.

Such accumulations of this refuse material are met with under two quite different circumstances: as where a suitable exposure of living rock occurs that is adapted to the ready chipping of the various forms of implements, which are, in such cases, necessarily of a like mineral and present, curiously enough, a very uniform appearance in the pattern adopted, although the mineral is readily chipped into other and more delicate forms, as shown by broken specimens in the refuse heaps where a boulder of this same rock has been utilized; and again, we have such accumulations, where selected minerals, in small masses, have been brought together, and from this little store-house of crude materials the various forms of implements and weapons have been formed.

In the upper valley of the Delaware river, where the rocks frequently afford such shelter as the Indian was glad to avail himself of, and which are, at the same time, suitable for making any of the limited range of forms of implements which his ingenuity had

¹ See Rau, in Smith. Ann. Reps., for 1872, p. 348, and 1877, p. 291.

at that time devised ; these traces, in accumulations of flakes and splinters, of an early occupancy of the country by savage man—these “open air work-shops,” as they have been called, are frequently met with. The abundance of small flakes or chips, and of broken and unfinished specimens, at once indicate the character of the locality. In such of these, as I have been able carefully to examine, there has been a marked absence of such small pebbles and indented oval stones as are supposed to have been used in flaking the chert, jasper, and quartz, that were so largely selected as the most desirable minerals for the manufacture of stone implements. Whether these had been removed and the places abandoned while the Indians were still in possession of the country, or not, is impossible to determine ; but in all such work-shop sites that I have examined, where the living rock was utilized, there was in every instance an absence of several features that characterize the same sites when found in more southern localities, where there is no living rock, and all the material and the tools themselves, when of stone, were transported from more or less distant points. The former have always suggested to me that, the locality being accessible to all, the Indians came and went as their needs suggested, and fashioned for themselves what weapons or implements they desired, and in this case they naturally took away with them such tools as they used in the making of their supplies. This would account for a marked absence of even the simple hammer-stones. On the other hand, where all the material is foreign to the spot, it is the property of one or a few individuals ; and if left at any time all connected with it would be left behind, unless it be the finished weapons and domestic implements.

While at first sight it might be thought that where a rock *in situ* could be utilized there such selection could be made of the mineral as detached. as would be available for the desired forms of implements, and comparatively few failures would occur. In other words, that the detached mass would be in such shape and so far free from weathered surfaces, that any defect in its constitution, as the presence of a foreign mineral, could be detected, and no trial chipping needed to be made, to determine its availability for the desired purpose. No such discrimination, however, was exercised by the Indians ; and in a rock-shelter, near Belvidere, N. J.,

where arrowpoints were once made in vast numbers, there was an immense accumulation of chips that had every appearance of being simply failures, being, for the most part, blocked out spear-heads, which had broken into halves, or otherwise so fractured, as to render them useless. In all such cases there were to be traced such variations from the characteristic constitution of the mineral as explained the cause of the failure to produce a finished implement on the part of the ancient worker.

While, therefore, one cannot but admire the beauty of workmanship, and marked display of taste, as shown in the finish and design of the thousands of arrow-points that have been gathered from our fields; it must still be admitted that, notwithstanding all their skill, the makers gave themselves an infinity of unnecessary trouble in failing to be able to judge of the qualities of a given mass of mineral prior to expending considerable labor upon it. It was to this, rather than to want of skill, when good material was used, that we must attribute the quantities of "failures," as they have been well called, which characterize many a former site of an arrow-maker's labors.

I desire, now, to refer in detail to an accumulation of chips, cores, hammers, and other material, found in a limited space, and which collectively indicated very clearly that at that spot some one or two Redmen had, for a long time, been accustomed to manufacture all such forms of weapons and domestic implements as are collectively known as *chipped* implements; for it is a curious fact, that, so far as I have been able to determine, not a trace of a polished implement or polishing tool has been met with in these open-air work-shops.²

In Hamilton township, Mercer Co., N. J., I discovered, last summer (1878), a large series of splinters and irregular chips of

² As the localities where chipped stone implements have been extensively manufactured are usually of many acres in extent, this term of "open air" work-shops has been quite properly applied to them; and while to prevent confusion by a multiplicity of terms I have used the same name to designate these far less extensive deposits of refuse, it is perhaps inappropriate, so far as it suggests that the sites were too extensive to be effectually sheltered. In so contracted an area even was the largest series I have forwarded to the Museum (over one thousand specimens, Catalogue No. 14,633), that a wigwam was doubtlessly erected over it, and the occupants were protected from the inclemency of the weather to some extent, and wholly protected from the burning rays of our almost tropical summers. In this connection it may be well to state, that no trace of charcoal has been found at these points, which suggests that they were abandoned during the winter, a season when work of this kind, I should have supposed, would have been most usual.

jasper, mingled with the soil of a newly drained swamp. Immediately over these fragments large trees had grown, flourished to maturity, and died of old age. Judging from the depth at which some of the jasper chips were buried, it was evident that these trees had either been mere saplings, or had not yet sprouted, when the arrow-maker here pursued his calling. Having had my attention called to the spot by the surface indications, I carefully examined the ground over an area of several square yards, and gathered a large quantity of interesting material which has since been placed in the Museum and recorded under No. 14633. These consisted, first, of masses of jasper and allied minerals, gathered, I suppose, from the gravel beds forming the eastern bank of the Delaware river, at a point some four miles distant, as the crow flies. Secondly, of cores, or the remnants of the selected masses above mentioned, which were too small or too irregular in shape to be further available. Thirdly, of large flakes, which being similar to such flakes as often occur associated with relics as found in our fields, may or may not have been considered and used as a finished pattern of stone implement. These flakes, however, show little secondary chipping, and were intermingled with chips, splinters, and other refuse material. A noticeable feature of these flint-like masses and chips is the wonderful range of color they exhibit; not only of different shades of red, purple, blue, green, brown, and yellow, but many are most beautifully variegated. While there seems much evidence to show that attractive coloration was prized by the aborigines, I have found that the implements made from such material were either retained by them on relinquishing this territory to the white settlers, or the mineral thus brightly colored is more easily fractured, when used as weapons. Of the thousands of arrow-points already gathered those still perfect, of pale green, bright yellow, blue, and the lighter shades of red, are quite rare; yet flakes and broken implements of these colors are represented, not only in the fields, but in the work-shop accumulations, as already mentioned. Fourth, of blocked-out and subsequently discarded specimens,—the failure to finish them being evidently a flaw in the mineral not detected at the outset. Fifth, of specimens that were nearly finished but irreparably injured by some unlucky finishing touch. These are often arrowheads, with the points broken off, or such as have a barb or a basal corner detached. A very considerable number of

these are certainly quite as useful as weapons, as perfect specimens; and why discarded, as they were, for some very trifling defect, is difficult to understand. Are we to conclude, that the readiness with which adepts manufactured these chipped implements was far greater than has been supposed, and, therefore, that these objects were really very cheaply purchased, and that the Indian as a purchaser could afford to be very particular? Sixth, of chips and splinters of every size and shape, being the ordinary refuse that would necessarily accumulate in the course of making arrow and spear-points from jasper, by the process of chipping the mineral to the desired shapes. Seventh, of a series of oval, of nearly square, and of some irregularly shaped pebbles of sandstone, jasper, horn-stone, and porphyry, mostly with shallow depressions, one on each side; and with the ends, if oval, and the angles, if square or of irregular outline, so battered as to show that they had been used in striking mineral as dense or more resisting than that of which they consist. Considering the circumstances under which they were found, their shape, and the evidence of hard usage which they exhibit, it is very evident that they are rude implements used, at least in part, in the manufacture of arrowpoints and other forms of chipped implements. The use of such hammerstones was doubtlessly quite limited, and other more delicate means were taken to produce the delicate finish of the smaller implements and weapons. Although the size of these hammerstones varies greatly, it is difficult to see how minute flakes could be detached by their aid; and probably bone implements, that have since decayed, were used as finishing tools.

This same simple form of hammer, it is well here to observe, is very common wherever the ordinary patterns of relics are met with, and in every series gathered for me by collectors in various parts of the state (New Jersey) there are several examples, varying considerably in size and shape. It can scarcely be held that they had any use as a weapon, but as hammers they would be useful in many ways.

Eighth, a few flat slabs of stone of small size, with an occasional trace of hammering on either side. These were possibly used as lap-stones in part; and may have been used, also, in connection with bone implements, or flakers, as a breastplate, whereon rested the base of the bone flaking tool, when, by pressure, series of small flakes were detached. This is altogether

conjectural, however; and considering, also, that these so-called lap-stones are not at all common, the matter of their use, as suggested, is at best, problematical.

Associated with the above—in all, about one thousand pieces—were no traces of charcoal, or any indication whatever of fire; no pottery, or any whole or fragmentary weapon, or domestic implement of any description other than what have been mentioned.

The apparent absence of fire from this unquestionable workshop site deserves a few words of comment, as many suggestions naturally arise. It may, indeed, be thought that the absence of charcoal is mere negative evidence that no fire was used or had at this spot; but when we consider that fire here would always be at or very near the same place, whenever kindled, and would be kept continually burning during winter, it is evident that some trace would remain on or in soil not subsequently disturbed, as was the case in this instance. Very frequently in my examinations of different known localities where stone implements abound, I have met with traces of fire that were clearly evidences of an earlier occupation of the locality than the first visit of the white settlers. Assuming, then, that the absence of all indication of fire is evidence that it had not been kindled there by the Indians, the fact seems to imply that the spot was not occupied in winter, a season when we would naturally suppose the Indians would be far busier in this industry than at any other time. The supposed absence of fire also indicates that the flint, prior to use, was not heated, as has been stated was often done. What the effects of moderate exposure to heat are, so far as facilitating the fracture of jasper and allied mineral, I do not know; but my own experience in arrow-making leads me to conclude that the varieties of jasper and quartz represented in these several series are quite readily fractured, by either percussion, or pressure; and the art of arrowpoint making consists wholly in the acquired skill in governing the size and direction of the flakes detached, after the implement has acquired in general outline, the desired shape and size. On the other hand, while a site, such as this that I have described, was apparently only occupied in pleasant weather, it is noticeable, that all such sites, so far as I have discovered them, lie in close proximity to a spring or rivulet of good water.

The entire amount of refuse material, and number of tools

constituting the traces of this workshop site, are possibly too few to indicate otherwise than a very limited tarrying at the spot, and that I am not warranted in drawing some of my inferences; but, as yet, it is not demonstrable how many chips are necessarily stricken off in making an arrowhead, and it is to be borne in mind that the earth was here thickly strewn with thousands of very small flakes, looking very much like coarsely crumbled shells; and as much of this refuse was quite deep in the soil, as well as some of the larger pieces, it seems to me evident that the spot was occupied for a long time. The coarse refuse may indeed at times have been gathered up and removed. We find just such fragments about the known sites of Indian settlements; and have already suggested that no flake was too primitive to be unavailable as a cutting implement. Even flint chips are recorded among the contents of graves.³ Even supposing no removal of the coarser refuse ever took place, the thickly and deeply bestrown condition of the soil with very minute chips, indicates a prolonged occupation of this particular site.

Considering all the circumstances, the story that this accumulation tells, is this: here, shaded by dense woods, on a slightly elevated knoll, which was surrounded by a meadow-like expanse of low-lying ground, through which trickled a sparkling spring brook, had tarried at times, for years, an arrow maker, shaping with marvellous skill those varied patterns of spearpoints, and delicate drills, such as are still gathered from the adjoining fields. Unlike localities of many acres in extent, where the traces of former occupation are scattered throughout the whole area, and indicate that manufacturing had once been in progress simply by the abundance of chips, we have in this workshop site the evidences of the toil of, probably, a single skilled workman, who, in the quiet of his forest retreat, spent the greater portion of a long and useful life.

There is one feature of this interesting find to which I desire to call particular attention, inasmuch as it probably has an important bearing on the age of the post-glacial, but supposed *pre-Indian* arrow and spearpoints, to which I have alluded in a former paper.⁴ This is the entire absence of argillite, or that material of which nearly the entire series of paleolithic implements from the gravel-

³ Eleventh Ann. Rep. of Peab. Mus. of Amer. Arch. and Eth., p. 313.

⁴ Eleventh Annual Report of Peabody Museum, p. 254, 1878.

beds is made. I have already referred to the rude forms of argillite arrowheads as now met with upon the surface, and if they are, as a class, to be considered as having the same origin as that of the more elaborately formed specimens of jasper, chalcedony, and quartz, then it would be natural to expect to find in the refuse of open air workshops, such as I have here described, an abundance of flakes, splinters, and cores of that mineral. Such traces, indicative of the use of argillite, however, do not occur; nor, as yet, have otherwise similar sites been discovered where that mineral only was used. It can scarcely be held that, as argillite occurs in the valley of the Delaware as a living rock, there only should we expect to find traces of the localities where the mineral was worked up into arrowheads. It occurs also in the drift in the lower portions of the same valley, and is as readily obtained as the pebbles of quartz and jasper with which it is associated. Flakes of argillite do occur quite frequently in the fields, just where we find the finished relics of the same material, and also some rude examples of what may be blocked-out or unfinished implements, but why may not these have been lying on the surface and in the soil since prior to the advent of the Indians?

While the two classes, or those stone implements made of argillite and those of quartz, occur on the surface intimately associated, it is obviously impracticable to dissociate them with anything like scientific accuracy; and, furthermore, there are not wanting indications leading one to believe that these argillite implements were frequently worked over by the Indians to be used again; and if we consider the Indians were not America's first occupants, they were, on their arrival, either in contact with the earlier race, and by trade, or as the result of warfare, possessed of the weapons and implements of the pre-occupants of the land; or had an earlier people become extinct or migrated, the succeeding Redmen would surely have found the discarded implements of their predecessors, as we now find those of the Indians. However we may view the case, there is no reason why the rudely fashioned and weathered argillite implements may not be far older than those made of other material; and, when a considerable extent of territory is carefully examined, it becomes evident, as I have elsewhere endeavored to show,⁵ that such implements, whether

⁵ *Nature*, Vol. XI, p. 215, Jan. 14, 1875, London; and *American Naturalist*, Vol. X, June, 1876, p. 329.

of pre-Indian or Indian origin, ante-date the jasper and quartz specimens with which they are now to some extent associated. Unquestionably the occasional occurrence of argillite implements of exceeding delicacy of form, accuracy of outline, and comparative freshness of the surface, has an important bearing upon this question of the date of the *general use* of this mineral,—for such specimens of savage handiwork are certainly the productions of the Indians; but when we remember that there have been no arrowpoints made in New Jersey for at least two centuries, and that argillite chipped some time prior to that has undergone no appreciable alteration, we surely have something of a guide as to the rate of weathering of those other forms that are so deeply altered over their entire surfaces.⁶ No jasper specimens have been found showing alteration of the surface. They are as fresh as though chipped but yesterday, and is it not probable, that, although argillite will be affected by exposure before jasper, if the two minerals were in common use from the date of the arrival of the Indians, there would be some difference detected in the surfaces of jasper arrowheads when thousands are examined and compared?

Until we meet with the chips and other refuse of argillite associated with those of jasper and quartz, or discover a workshop site where it was solely used, is it not safe to conclude that, from the great degree of weathering which the vast majority of the implements made from it have undergone, such specimens are of an earlier origin than those of jasper and quartz; the exceptions being referable, first, to the fact that outcroppings of this rock, where found in place, were sometimes utilized, though not to a great extent, and also to re-chipping by the Indians, of weapons, that to them, when they were gathered, were veritable relics of a by-gone time. Finally, as the paleolithic implements proper, as found deeply imbedded in the drift deposits, are argillite, as a class, it appears rational to ascribe the origin of the great majority of the rude weapons of the same material to the same people who fashioned them; and its absence from the open air workshops such as I have described seems of itself confirmatory of

⁶ Arrowheads of slate and shale are quite commonly met with throughout the entire area of the state. These, very generally, have "weathered" to a greater extent than those of argillite, and having much the same appearance of the surface, are readily mistaken, for such as are made of the latter material. Arrowheads of argillite are not abundant; in many localities they are very seldom found.

this supposed earlier origin of these ruder, and much weathered implements, in which we have, I believe, a trace of an industry, once world-wide, on the part of a people still ruder than the Indians, as we know them, whose productions as a class are as primitive and uniform as those of the later race are elaborate and varied.

An interesting feature connected with these accumulations of refuse is, that while the minerals there found are the same as that of which the great bulk of arrowheads and other forms are made, on the other hand, there will occasionally be met with a specimen of an arrowpoint, or fragment of a spear, of a different pattern and material than those with which we are so familiar. A fragment of obsidian, it may be, as the extreme point or barb of an arrowpoint; or jasper, of a color not occurring here, yet common in distant southern or western localities. These instances are now so numerous that it shows clearly the contact of different and distant tribes; for what better evidence can be produced than that an implement has been brought, either through the vicissitudes of warfare, or through barter, from some far off point, when we find no trace of the material of which it is made, in the heaps of refuse that resident workman left on the former sites of their labors? The range of patterns of all our chipped implements is infinitely varied, and it needs but a glance at the material I have gathered from this one spot to show how little can be said of the belongings of any specimen, as judged by its shape. Scarcely a European pattern even, except the most delicate arrowpoints from Denmark, but finds here its counterpart, in at least a fragmentary state. The shapes indeed seem to have been determined by the particular use, which suggested certain sizes and shapes; but the outline of vast numbers was determined by the shape of the chips utilized, and thus originated the non-symmetrical specimens that we frequently find. Some of these are so crooked that their availability as arrowpoints is questionable; and that such were used as knives is quite probable. In the territory of every petty tribe, and every creek appears to have had such tribal communities dwelling in its valley, there is seen a family likeness, so to speak, extending through the whole range of chipped implements, and especially the arrow and spearheads found therein; and it is not difficult to dissociate an occasional specimen, as it occurs in collecting, and set it aside as something foreign.

A second find of this character also deserves a detailed notice, although it has already been referred to by Prof. Wyman.⁷ At the time of its discovery I did not recognize fully the importance of carefully noting everything connected with it, and simply furnished Prof. Wyman, at the time, a few brief notes with reference to the specimens gathered and forwarded to the Museum. This "open air workshop" was discovered on the writer's farm in 1872, and is less than a mile distant from the one previously described. It is situated on the brow of a hill, or rather of a plateau margin, where this is broken by a ravine through which flows a considerable brook. Originally surrounded on two sides by a dense forest here always has been an open spot, with an extensive southern out-look over a broad expanse of meadow extending from the foot of the uplands to the river. When discovered there was simply a shallow depression to be seen, nearly circular in outline and about ten feet in diameter. On removing a thin layer of vegetable mould, through which projected a few irregular masses of yellow jasper, there occurred a large quantity of thin flakes, chips, and a number of broken arrowpoints, especially of the triangular pattern. Of the latter there was a much larger proportion than in the preceding instance, and may indicate that the workman who had operated here had either been less skillful, or that this pattern is more liable to breakage in finishing, which seems improbable. The accumulation of refuse, in this instance, was on a level floor of compact clay-earth, about which I could not discover a trace of fire. Separated from this refuse as described, by a layer of earth nearly a foot in depth, there occurred a somewhat similar deposit, except that cores and large chips only were found, with no trace of either hammer-stones, or broken or unfinished implements. There was also but little variety of mineral, the deposit consisting exclusively of dark, yellow-brown jasper. My impression is that there was no connection between the two finds, but that the deeper one was just so much older as it requires years for a soil of some eleven inches to accumulate in a forest, where the growth of vegetable mould, from the decay of the annual fall of foliage, is steadily in progress.

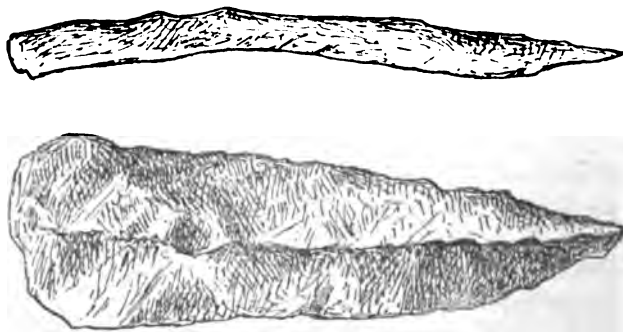
A third deposit of flint chips to which I desire to call attention, is a series of some fifty specimens of brown jasper of quite a uni-

⁷ Fifth Annual Report Peabody Museum, p. 27.

form size (P. M. 14706), but which in the character of the fracture differ materially from both cores and flakes. They are too irregular and small for the former, and exhibit no regularity in the detachment of masses from them for subsequent shaping into arrowheads, as is shown in the larger cores in the collection. Still, when we consider that they were found closely packed together, and buried nearly a foot deep in a meadow, which was originally swampy ground, it is evident that they were designedly inhumed; but for what purpose it is difficult even to conjecture.

It may be well here to state that the three deposits just described are all in the immediate vicinity of the extensive deposit of finished implements to which reference has been made in other publications.⁸ These were all of the same material, and identical

FIG. 1.



Flake of Argillite, (P. M. 9008).

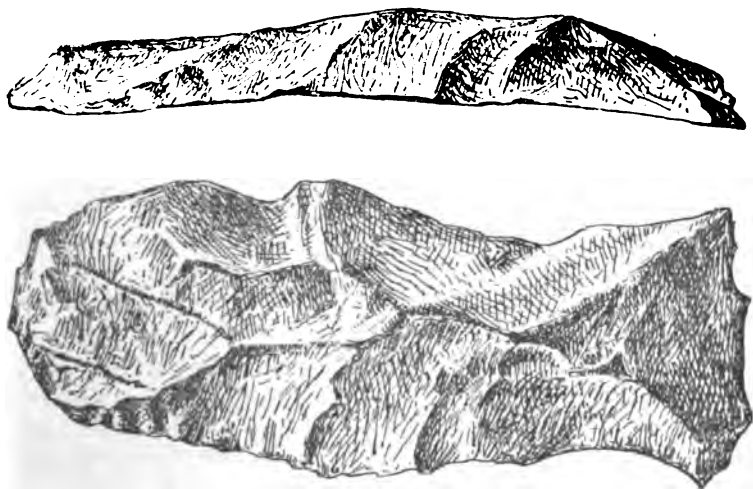
with the jasper fragments here mentioned. If the former were made at the spot or near where they were found buried this later find of fragments may indeed be a portion of the refuse accumulated in their manufacture; they were selected possibly for converting into small arrowpoints, and afterwards forgotten.

Having already incidentally referred to the chance occurrence of flakes and chips upon the surface of the ground, it is well, in conclusion, to refer to these more particularly; as it is possible that collectively they may have more significance than might at first be supposed. As I have already mentioned, jasper flakes occur not only in "open-air workshop" sites, but on the surface of our fields; while flakes of other minerals, more especially of argillite, also occur whenever we find arrowpoints and spear-

⁸ Annual Report of Smithsonian Institution, for 1875, p. 273.

heads of the same mineral, on the other hand, no deposits of argillite chips and cores have been discovered. From these facts I have drawn the inferences, and think I am warranted in so doing; first, that as argillite flakes, mostly exhibiting a great degree of weathering of their surfaces, are associated with finished implements of the same material, but never in such numbers as to indicate the spots whereon the former were fabricated, it is to be supposed that as flakes they were put to some use, such as a knife, or if very small and not of too irregular an outline, as arrowpoints. Figures 1 and 2 are examples of flakes of argillite

FIG. 2.

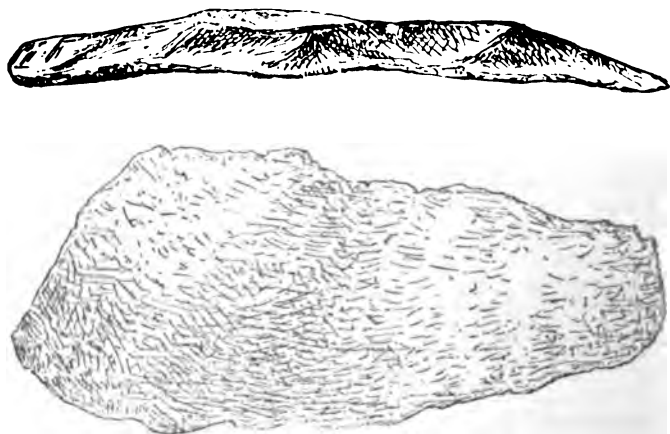


Flake of Argillite (P. M. 16315).

(P. M. 9008, 16315) such as are found singly on our fields. In general outline, figure 2 does not materially differ from flint flakes, as found in Europe; and with the sharp edge that this mineral presents, when freshly fractured, it certainly is well adapted to cutting such yielding substances as the skin and flesh of small mammals, and to scaling and cleaning fish. Whether figure 1 could be used as an arrowpoint, or is to be looked upon as merely a small knife, is altogether conjectural; and yet there are many ways in which just such a fragment of stone, considering that the edges are sharp, might be utilized. The same character of flakes (Fig. 3, P. M. 14629) and small chips of jasper, associated also with finished implements of the same mineral,

being likewise scattered singly over the entire area of the state, must therefore, if I have not misinterpreted the argillite examples, have a like significance. Considering the absence, as yet, of sites of arrow-makers workshops, where argillite was exclusively used, and that chipped implements of this mineral are as characteristic of the deeper soils, as compared with jasper, as indicated by the depth whereat they occur in virgin earth, wherever it has been examined; and also that argillite is a living rock in the vicinity, while jasper and the allied minerals, of which the bulk of the chipped implements are fashioned, occur as boulders in the drift, and require more labor to gather than it would to visit a ledge of living rock,—I am led to conclude that the argillite spears, arrowpoints

FIG. 3.



Flake of Jasper (P. M. 14623).

and flakes as a class, are of an earlier time than the same implements of flint-like mineral; and doubtless bear as close a relationship to the still ruder—the *primitive* implements found in the drift gravels of the river valley—as to the former. While, both as chipped from old implements, and fashioned *de novo*, true Indian relics of argillite do occur; there seems nothing in this fact to militate with the opinion expressed as to their antiquity, as a class, being much greater. Certainly, if fabricated by a preoccupying people, or by their own ancestors, these discarded or lost implements would not escape the keen vision of the Indians, and few lacked sufficient skill to repoint, and render available these ruder specimens of the same weapons to which they were accustomed.

The conclusion might readily be drawn from the foregoing that weapons and implements of all kinds, chipped from stone, were made only by a comparative few, who, gifted with the required dexterity, supplied the people of their tribe with such implements, as they required. While the manufacture of the finest specimens was very likely confined to adepts, who made it the business of their lives, inasmuch as we find scattered over the state, mingled with such as are of artistic workmanship, so very many of greatly inferior finish, it is probable that the latter were made by hunters or warriors, as the case might be, who subsequently lost them. However occupied, whether on the war-path or the chase, it would scarcely be possible for a warrior or a hunter to supply himself with as great a number of arrows as he would need, even for a few weeks. Vast numbers unquestionably were lost when first discharged from the bow; and when we consider the various conditions under which these same arrowpoints now occur, it is evident, I think, that to a certain extent, every Indian was his own armorer. Ornaments and stone implements, whether weapons or for domestic purposes, were of careful or careless finish—and we find both patterns—as their owners happened to be proud or indifferent, or possibly neat or slovenly. A ground edge to an oval pebble being required, the subsequent shaping of the other portion of the implement might be gradually accomplished, if such implements were used without handles, or were readily separated from them. Such shaping, by grinding away all irregularities, was at least a slow process, and one very unlikely to be followed as a means of livelihood by any one; and when we find a beautifully polished and symmetrically fashioned celt we probably have a proof of the patience and skill of its original owner; and such as had this patience and skill could soon learn, did he desire it, to chip from flint his own arrowpoints, knife and spears.

THE METHOD OF MANUFACTURING POTTERY AND BASKETS AMONG THE INDIANS OF SOUTHERN CALIFORNIA.

BY PAUL SCHUMACHER.

POTTERY.

AMONG the Kahweyahs (Cahuillos)¹, who, unlike the former Indians of the coast of California, make household utensils of burned clay instead of soapstone,² I observed the following mode of manufacturing pottery.

The clay of which their vessels are made is usually obtained from the creek bottoms, and is similar to that used by the Mexicans to make *adobe*, or sun-dried brick. It is a dark sticky humus with a light admixture of sand, or, as is the case in the neighborhood of White Water river, the white, fine, dense clay which so effectually discolors the water of that river at the head of the desert, the beginning of Coahuila valley. The clay, after being cleared of all rocky and light substances, is preserved in dried lumps for use. Of this clay a stiff "dough" is made by adding water and kneading it thoroughly. Some Indians, however, as for instance those of Sonora, mix powdered potsherds with the earth. In the neighborhood of White Water river the clay is very suitable in its natural state and is so used.

The "dough" is formed into cylinders of a foot and more in length, and, according to the size of the vessel to be made, more or less than half an inch in diameter.

The bottom of the vessel, which is usually globular or semi-globular, is made by coiling the cylinders in the desired form. They are then knit and smoothed to the required thickness by the hands, which are placed in such a position that the fingers operate inside the concavity, and the thumbs, pointing towards each other, work on the outside. The bottom of the vessel thus made is then placed in a shallow dish, either of wood or of burned clay, which

¹ The tribal name of the Indians at Agua Caliente, Los Angeles Co., is *Techahet*.

² See 11th Report Peabody Museum, p. 258.

takes the place of a potter's wheel and enables the worker to turn the vessel as he proceeds without endangering the form. Squatted on the ground, the worker turns the form as the cylinders are coiled into the desired shape, joining them together with the fingers and thumbs, holding the hands in the position already described.

When the vessel has thus been gradually built up, the clay is made compact and smooth by holding a rounded and smooth rock against the wall of the vessel on the inside, and patting the outside with a wooden trowel opposite the rock. The outside is then made even by a wooden scraper, corresponding in shape to the curve of the pot, which is dipped in water to accelerate this work. The dents inside, caused by the supporting rock, are usually allowed to remain. Experts among the manufacturers do away with the smoothing scraper and accomplish the same end with light taps of the trowel, the marks of which are sometimes plainly visible in the burned pottery, especially when done with a slightly corrugated trowel, caused by the protruding fibres of the wood. The narrow neck of the *olla*, or, especially, of the jar used for the transportation of water, which barely admits a hand, is last finished by the same method, but more clumsily, and is left more porous, as rock and trowel can not be used on that portion of the vessel.

The vessel is then put away to dry in the shade before it is exposed to the process of burning.

The kiln consists of a hole dug in the ground, about five feet in diameter and less in depth, the bottom of which is covered with fragments of pottery. When well heated by an abundance of brush fire, the earthen ware is arranged on the potsherd, and is covered with hot ashes. The pit is then closed with bark or grass, supported by green sticks strong enough to bear a subsequent covering of earth without endangering the underlying pottery, and is thus left for several days, until the pit has cooled off, when the burned vessels are taken out. The defects of this kiln sometimes necessitate a second burning, but in old pits, in which the wall is well baked and the heat is better retained than in new ones, good results are obtained with much surety.

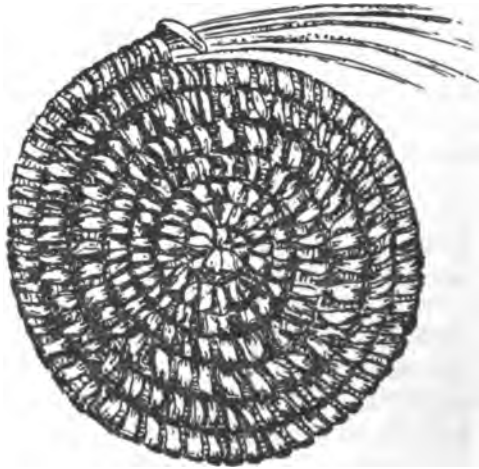
Among the Sonoras a kiln is used similar to the Mexican bake-oven. This is a structure of *adobe* in the form of a bee-hive, with an opening on top in addition to the firehole below. When

well heated, the vessels are properly arranged within and the oven closed at both openings with covers made of earth. The Sonoras also frequently dye their pottery with a red mineral paint before it is exposed to the heat, which produces an even red color, as the process of burning, being sometimes defective, would not alone accomplish this.

BASKETS.

The manufacture of baskets I also observed among the *Techáhet*, a tribe of the Calhuillos, at Agua Caliente, Los Angeles Co., Cal., while making researches for the Peabody Museum during the last year, and also on a previous occasion in Northern California and

FIG. 1.



Bottom of Basket.

Southern Oregon, while in the employ of the U. S. Coast Survey. Substantially the same method is employed in these several regions, though the material slightly differs, and likewise existed in former times among the Coast Indians of California, as is demonstrated by fragments found in their graves.

The *Techáhet* use the reed-grass (*Juncus robustus*), which I found growing in the small fresh-water marshes and creek-eddies at the beginning of the desert, and the tall thin grass (*Vilfa rigens*) found thriving with the *Yucca* which flourishes in such great varieties in that neighborhood; both are used in the dried state. The former species is used for binding the body of the basket, which

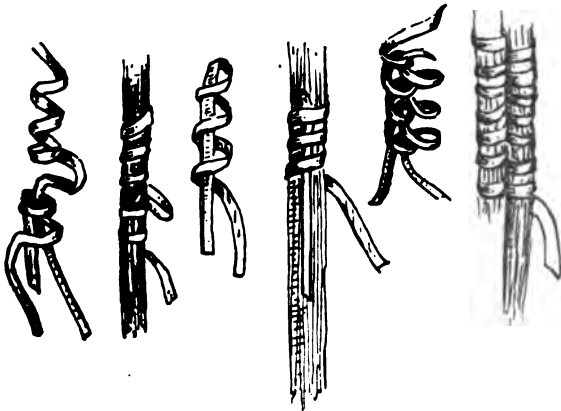
is made of the latter. The reed-grass is split, and some of it is dyed in different shades, usually brown,³ with which to produce the figures, mostly straight-lined or zigzag. The grass of which the body is made is worked in its natural state.

The basket progresses from the centre of the bottom, as shown in Fig. 1, which represents that part of natural size for baskets not exceeding a foot in diameter (P. M. No 14927), while the thickness of the coil of larger ones is increased by adding more of the grass of which it is made. The beginning of the stitch, for which the hole is made by a common bone needle, or borer, is shown in Fig. 2a, and is made by fastening one end of the binding by the

FIG. 2c.

FIG. 2a.

FIG. 2b.



Method of binding the coils of grass.

succeeding overlying stitches, and is thus neatly disposed of on the inside of the basket. Fig. 2b shows the manner in which the coils and stitches are arranged and the way they are bound together. When the length of the binding is used up, the end is similarly secured as at the beginning, Fig. 2c, or, at the finishing of the basket, under the preceding stitches. The shape of the basket is easily formed by lengthening, or shortening, the circuits of the coil, and by changing the stitches slightly towards the side

³ Dr. Palmer informs me that the Coahuila Indians of Southern California make a black dye by steeping in water plants of the *Sueda diffusa*. A yellowish-brown dye is derived in the same way from plants of the *Dalea Emoryi* and *D. polyadenia*. Both these dyes are, according to Dr. Palmer, used by the Indians at Agua Caliente for dyeing the meshes of which the baskets are made. See also Dr. Palmer's note on plants used for dyeing, in Amer. Nat. for Oct., 1878, p. 653.—F. W. P.

of the concavity to be formed. In forming the bottom of the baskets the split twigs of a shrub⁴ are generally employed in place of the *Juncus*, probably for the greater strength. Often this material is used for the sides as well as the bottom, but generally the *Juncus* is used after about a dozen or twenty coils have been made. The *Juncus* is also used without splitting, from which is made a coarse basket with loose meshes, similar to a net but without knots (P. M. No. 14933).

⁴This is probably the "Squaw berry" *Rhus aromatica*, which Dr. Palmer states (Amer. Nat., Sept., 1878, p. 597) is used for making baskets by the Indians of Utah, Arizona, Southern California and New Mexico.—F. W. P.

ABORIGINAL SOAPSTONE QUARRIES IN THE DISTRICT OF COLUMBIA.

BY ELMER R. REYNOLDS.

WITHIN four miles of Washington City there have been recently opened two well developed soapstone quarries which evidently had been worked at some former time by the people who dwelt in this neighborhood. Of this fact the excavations themselves, to say nothing of the numberless fragments of steatite pots and dishes, and the implements of stone and quartz used in fashioning them, furnish the unmistakable proofs. Notwithstanding the quarries are situated so near the city and convenient of access, they do not seem to have attracted any notice until the summer of 1874, when it was my good fortune during a half-aimless stroll, to stumble upon a curiously shaped, moss covered stone which, upon examination, proved to be a fragment of a soapstone mortar. Recognizing the importance of the "find," and concluding from the size and weight of the specimen that it had not wandered far from the place where it was manufactured, I at once began to search for the original quarry, and was soon rewarded by the discovery of an immense deposit of the same material, on a thickly wooded hillside near by. A close examination of the locality showed that the entire hill was composed of soapstone, partly covered with ferns, fallen leaves, and the accumulated *débris* of centuries. Hundreds of fragments cropped out through the leaves, nearly every one of which showed well defined traces of having been worked by the ancient owners of the quarry. In an hours' search I found several well preserved dishes which I concealed, intending to return at an early date to remove them. Shortly after, I changed my quarters to the city, and from that time till this last summer, professional duties and a rare opportunity to collect Indian implements in another direction, have taken up all my time.

The discovery of the soapstone quarry at Chulu, Amelia Co.,

Virginia, and the subsequent interesting investigation of the same, by Mr. Frank H. Cushing of the Smithsonian Institution, led me to communicate to Professor Baird the existence of the Rose Hill quarry on Broad Branch. He replied at once, inviting me to make an early visit to the mine in company with Mr. Cushing, who at that time was still absent in Virginia. On his return, we visited the locality, and in a short time succeeded in finding a profusion of broken and unfinished implements.

Our brief visit demonstrated the fact that, from an archaeological point of view, the quarry was superior to any similar deposit, so far as known, in the country. We discovered the remains of no less than seven well defined shafts or excavations, leading into the hill, whence the early potters had procured a quality of rock superior to that found on the surface.

A few days later, we paid another visit to the locality, in company with Dr. Charles Rau and several other distinguished attachés of the Smithsonian Institution. At the quarry we separated into groups and proceeded to make a thorough and careful survey of the hill and country immediately surrounding it.

With the exception of the southern side, the whole hill is made up entirely of soapstone. About midway from top to bottom, on the southeast angle, are the remains of an old shaft, formed by the Indians for the purpose of testing the quality of the stone — which at this point changes into a coarse, granitic looking rock which is now being quarried by the neighboring farmers. From the stream at its northern base, I should judge that the hill is about seventy-five feet high, by six hundred feet in length and three hundred feet in breadth, at its base. In general outlines it somewhat resembles a truncated pyramid. The soapstone on the surface is mostly in fragments, and covers the eastern, northern, and western sides, and a portion of the exposed summit.

On the northern side it descends to the creek at its base, passes entirely under it, ascends and swells out into a distinct quarry of more than three times the size of the former. The creek which forms the dividing line, runs for hundreds of feet over a beautiful greenish-gray floor of soapstone, worn into ruts and pools by the sand and pebbles brought down from the adjacent field during the spring and autumn floods.

A tolerably thick growth of beech and oak is scattered over the hill on all sides. While intervening space is covered with ferns,

and random patches of huckleberry bushes which have found a foothold among the rocks.

The excavations previously mentioned were found to be in a good state of preservation, considering the long lapse of time since they were worked by the natives. One shaft we found to be over three feet deep, in spite of the long-continued wash from the hillside above.

In addition to the shafts and other interesting features of aboriginal labor, we were fortunate enough to find several hundred dishes, more or less broken, besides a number of picks and hammer-stones, and also one or two steatite spades used in cutting and removing the earth when opening a shaft into the quarry.

Since beginning operations, in addition to digging out and carefully studying the workings of one of the ancient shafts, Mr. Cushing has selected and removed more than two tons of implements from the quarry, and when I visited the locality last I found at least two tons more awaiting transportation. In the half barrel of specimens that I send you (P. M. Nos. 16075-16091), it will be observed that I have discriminated in favor of those articles which would best give you an idea of the different patterns, their size and shape; the degree of thinness to which reduced, and particularly of those exhibiting the grooves and furrows produced by the stone pick, in their fabrication. Whilst aiming to make the contribution as interesting as circumstances would permit, I cannot help but regret that the lateness of the season prevents the success, in your behalf, that I am sure to meet with in the spring.

In selecting masses of soapstone, the natives seem to have been guided by the quality of the material and the size and use of the dish required. Some of the partially finished blocks are high and massive with thick walls and bottoms, which seem to indicate that a mortar was intended. A broad, shallow dish, with a slightly elevated rim and a thick bottom, could have been used only as a grinding implement, in conjunction with flat stone mullers, or broad bottomed pestles. In this shape, no such solidity as is shown in the mortars, was needed, as the mullers were used in a "holy-stoning," or rotary manner.

From the fact that, on several occasions, I have found comparatively thin and well finished fragments of soapstone dishes in the ancient camping grounds on the Anacostia river, near Bladens-

burgh, Md., fully ten miles from the nearest quarry, and among the shellheaps on the Wicomico river in St. Mary's County, Md., seventy-five miles south of this city, and also from the entire absence—so far as my observations have gone—of artistically finished dishes near the mine, I have come to the conclusion that the dishes were not finished entirely at the quarries, but were simply blocked out and partially reduced in size and weight, in order to facilitate transportation to remote encampments.

The majority of the dishes found, thus far, are oblong, and reasonably symmetrical, considering the tools with which they were wrought. Nearly all are supplied with handles at the ends, which are nothing more than ear-like projections, from three-fourths of an inch to an inch and a half in length. In one or two instances I have found a dish with one ear at the top, and the other at the bottom of the opposite end. Why this apparently whimsical deviation was made I am unable to conjecture, unless, in finishing the dish, one ear at the top had been accidentally broken off, and to replace it, a duplicate had to be formed from the unfinished mass at the bottom. The thought also presented itself, that this handle near the bottom may have been made purposely, in order to assist in tipping a heavy mortar to one side to facilitate the removal of its contents after being ground. This is, I admit, a rather strained and far-fetched idea, but, in the absence of anything better, I offer it as a suggestion.

I invariably found a score or two of the oblong pattern, to one of any other. Nos. 16078, 16084, and No. 16089, Peabody Mus. catalogue, are good specimens of this class; the latter of which shows one well finished ear. Nos. 16075, 16082, and 16088, belong to the "oblong" but differ somewhat from the regular pattern, in being "tureen" shaped, and lighter and more graceful in design. The only advantage to be derived from this shape, exclusive of its superior attractiveness, was, I conjecture, in a lightness and consequent additional convenience attending frequent removals.

A circular dish of a gallon capacity would be not only exceedingly heavy, but decidedly awkward and unhandy to carry; whereas, an oblong dish, deeply excavated and presenting less surface at the bottom, could be made much thinner and lighter in proportion to its capacity, than the former.

The smallest dishes found, so far, are mostly circular, or with a slight deviation in favor of the oval, and by reason of their

size and consequent lightness show more artistic workmanship. The number of small dishes met with, is surprisingly out of proportion to the large number made to hold from two quarts to one or two gallons. The smallest yet found will not hold more than a quarter of a pint; while the largest fragment I have seen belonged to a vessel which, if complete, would probably hold nearly seven gallons.

With reference, again, to the smallest dishes, I can account for their absence only on the supposition that, domestic utensils of such diminutive size were, of course, unfitted to cook in; and further, that for all ordinary purposes, woven baskets, "pitched within and without," or the ordinary coarse clay pottery took their place.

The first operation after the stone was taken from the quarry, was to block out the mortar or dish, and finish it externally, before proceeding to cut away and smooth down the inner side. This method was adopted in almost every instance, and in the numberless cases met with, I have observed but two bowls that were finished inside, whilst the rough angles on the outside remained untouched.

No. 16075 is a reasonably fair type to illustrate the first stage of development; but from exposure to the elements it lacks the usual pick marks or grooves. It shows that, while the outside is as nearly finished as the occasion required, the interior has undergone but little change. No. 16088 belongs to the same group, and shows in an excellent manner, the external grooves lacking in No. 16075. Both of these vessels are "tureen" shaped, and about the same in size, weight, and capacity. The latter, No. 16088, I dug out of the hillside during my last visit to the quarry. It was covered with leaves and earth, with the exception of one corner, which projected above the surface. It owes its excellent state of preservation to the earth which covered it since the day it was accidentally broken whilst being finished internally.

We now come to the inside of the dish, or, more properly speaking, to the surface from which the digging out, or excavating, begins. The pick is now brought into use, and after a tedious operation the bowl is formed in the following manner: commencing at what is to be the outer rim of the dish, a series of sloping cuts are made, all tending *downward and inward toward the centre*.

By "a series of cuts" I do not wish to infer that it was done with a hafted implement or one with a broad cutting edge, but rather, by a pointed and somewhat flat-edged *pick used as a chisel* and driven by sharp and well directed blows from a heavy stick, or mallet. These sloping cuts are continued till the circuit of the dish has been completed; the operation is then changed, the cuts being directed *downward and outward toward the rim*. In this manner a *V* shaped trench is soon formed around the upper surface of the block. The chisel is again reversed and the operation repeated as before, with this exception: whenever the cutting is toward the centre, the pick is placed in the *bottom* of the trench and driven still further downward, care being taken not to damage the rim by too heavy a blow on the chisel. When it becomes necessary to cut outward again, the chisel is carried to the *top* of the dish each time, and the central mass sliced down in a comparatively easy manner. Finally, nothing remains but a cone-shaped projection which is speedily removed by a few well directed blows, and the irregular sides are scraped and polished till the dish is ready for use. It may be surmised that this is only a conjectural mode of excavating these dishes; but this is not the case by any means, as I have in my collection two exceedingly handsome specimens showing perfect finish externally, while the inside of one is partially excavated after the fashion indicated though not carried out so fully in all the details. A great deal of care evidently was required even in so simple a matter as removing the "core," judging by the numerous fragments which all bear evidence of having been nearly completed, when an untimely blow unexpectedly brought the labor of a day to naught, and verified the old adage that "There's many a slip betwixt the cup and the lip."

Another dish is deserving of special mention, although, I regret to say, it is probably lost beyond recovery. This is to be regretted, as it was the second of the only specimens I have ever seen that were finished on the inside without any trace of workmanship exteriorly. It was formed from a triangular block of deep green soapstone, was quite well finished and had undoubtedly been used as a mortar. The sides and bottom were very thick and the whole very heavy; much more so than ordinary soapstone. A dish of this class could be finished much more quickly inside, than the other, yet I doubt whether any time or

labor could be saved by the operation, for the same patient care would be necessary in chipping away the outside, to avoid an accidental fracture of the dish before completion.

No. 16086 appears to have been the end of a well shaped oblong dish. The corners are evenly rounded and it has a circular projection at the end, to serve as a handle.

No. 16080 is a fragment of an unusually large vessel. The lateral curve is very gradual, which would seem to indicate a capacity of several gallons. The thickness is uniform, excepting a portion of the rim which swells out into a well defined "shoulder" on the outer margin; but as this is hardly large enough for a handle, it was probably left to facilitate its use.

No. 16077 is a remarkably well formed and well finished fragment. It bears a close resemblance to the wide, shallow milk-pans and has a suggestive and familiar appearance.

Amongst the remaining fragments, each possesses some characteristic not entirely common to the others, yet not of sufficient importance to mention individually.

Thus far I have confined my description to the southern quarry discovered in 1874. It is now necessary to consider the larger one on the northern side of the stream.

This quarry is a continuation of the other—or, more properly speaking, this being the larger, the other is simply a straggling offshoot. The hill, roughly estimated, is about one hundred and fifty feet high, with the largest slope toward the east. On this side it descends somewhat abruptly for about a hundred feet from the apex, and then extends eastward on nearly a dead level, till the extremity of the quarry is reached, when it falls suddenly into a cultivated field. The northern side slopes away gradually and ends in a narrow ravine, the mutual boundary of this, and another hill beyond. The western side descends evenly, gradually, and loses itself in a belt of pines at its base. The southern side slopes abruptly, and is bounded by the stream. A thick forest of white oak covers the whole hill, which, probably, has an area of about forty acres.

The soapstone is found very sparingly on the eastern side; there is none on the southern, but on the northern and western sides it crops out abundantly. The summit extends north and south a distance of about twenty-five or thirty paces, and nearly

the whole surface has been "burrowed" into, and furrowed by the "ancients," in search of the much desired potstone.

The trench runs along the centre of the quarry and dips over the northern shoulder of the hill. The earth has been thrown out on each side and at one time must have presented quite a military appearance with a high embankment on each hand. The excavation is now about two or three feet below the partially surrounding surface. Large trees grow in the shaft which shows unquestionable evidence of having been one of the first excavated.

The fragments of dishes found here, and the rock itself, all indicate an extremely venerable age; and I think, with excellent reason, that at least four hundred years must have passed over this hill since it was mined to any extent. An air of extreme antiquity lingers about these relics of a rude, but highly interesting race, whose descendants are each day being pressed closer to the wall in their ceaseless struggle with the civilization of the east. The implements found here, exclusive of their shape, show no trace of human workmanship. The broken pots are covered with moss and lichens which have found social companionship in the worn and weathered fragments. Those that have escaped the moss, look worn and faded, and if in a volcanic district would readily pass for slag and scorixæ. The bluish-gray color is gone, and a reddish-brown has taken its place; while the soft, slippery feeling, which is so characteristic of the stone, has disappeared entirely, leaving a rough, harsh surface, like coarse sandstone. No. 16085 is the only fragment sent from this quarry. It belonged to an upright dish, and, to one not familiar with the subject, would readily pass for a simple fragment without anything special to recommend it to notice, so completely has it lost every trace of the chisel.

As to the age of these quarries nothing definite will, probably, ever be known. It seems reasonably certain that neither has been worked to any extent since the settlement of the whites at St. Marys and Jamestown; and as the utensils manufactured out of the material taken from the later quarry, after the lapse of six or seven generations, still retained the marks of the tools with which they were shaped, I not unnaturally concluded that those specimens in which the evidence of human workmanship was almost obliterated, were of much greater antiquity. But this

opinion has been somewhat modified, as in comparing their respective ages, one important feature, not noticed in my earlier visits, probably has a tendency to militate against the ancient appearance of the elder mine. I have already remarked the faded and honeycombed appearance of the material found in and about the excavations of this quarry. These features, I considered, were the natural results of time and exposure; but I am now satisfied, from a critical examination, that the appearance referred to, is, in part, to be ascribed to the inferiority of the material used. In breaking open fragments of the rock, I find in many, a series of cellular cavities, at irregular intervals, filled with what appeared to be oxide of iron—a spongy looking, reddish-brown powder easily removed from the cavities with the point of a pencil. This was undoubtedly the cause of the early abandonment of this quarry. It was utilized until the southern hill was found to contain a better quality of mineral and then it was abandoned. I think it probable that, at a remote period of time, the newer quarry was entirely concealed by a thick stratum of earth, and I base my idea on the fact that, whenever a portion of the fragments (which cover the whole northern side) is removed, the solid earth appears, with no indications that the ledges approach the surface. I have found places where this rule would fail, and merely mention it in order to correct the impression I once had that the undisturbed rock cropped out at every point on the surface. With reference again, to the recently discovered quality of the soapstone in the northern quarry, it may be thought that my explanation is superfluous; but as these “notes” are for the eyes of the public, I am unwilling to have any statement, however trivial, go abroad that would have a tendency to mislead others.

I have omitted to mention in its proper place that the only excavation found in the northern quarry, exclusive of the large trench on the summit, is situated in the southwestern declivity of the hill, about forty feet above the stream. It is in a much better state of preservation than any in the southern quarry, which is owing entirely to its secluded location. This excavation runs east and west parallel with the creek. It is ten feet long, by from four to six in width, and is between two and three feet deep. The earth from the interior was thrown out below, and at an early period must have formed an embankment of some magnitude. As no fragments of stone or unfinished implements are found in

the immediate vicinity, I am led to believe that this shaft was not worked to a successful issue.

One more class of implements yet remains to be mentioned, in connection with the manufacture of soapstone bowls and mortars. These, in most works where they are introduced, are classified as "picks," and they were ordinarily used as such in getting out blocks of the material, and in roughly cutting away the superfluous portions; but in all subsequent operations I think that they were unquestionably used as chisels.

The picks sent you have undoubtedly been much worn and dulled at the points, and were used for ordinary work; while the regular chisels were much smaller and sharper, and in some instances of a different quality of stone. The picks were found scattered about at random all through the quarry, and in one of the shafts that has been reopened. They weigh from a few ounces to several pounds, according to the use required. The material from which they were usually made is a variety of discolored quartzite, found abundantly in certain localities in this vicinity. Little labor or skill was required in forming them, as they were simply splintered down from a larger mass, with a little additional chipping to give them a sharp cutting point, or blade.

If we examine any well formed fragment it will be seen that, however skilful or proficient an aboriginal workman might have become, it was utterly out of the question to drive a deep, extended groove from top to bottom of a large mortar; whereas, on the other hand, the long, deep seated furrows are exactly the result to be expected from a sharp pointed chisel with a good cutting edge.

On the western side of the hill, near its base, in a thick grove of pines, I found several large boulders of quartzite, from which material many of the picks were undoubtedly obtained. Scattered about among the trees, were several dozens of those rudely formed implements which had been splintered off the boulders and never utilized. It is difficult to imagine how these large masses were splintered down without the free use of iron tools, as a heavy blow on one of them from an ordinary hafted stone hammer would splinter the latter into fragments. Possibly the Indians may have succeeded in detaching flaky masses by long repeated and monotonous taps, after the boulders had been thoroughly heated and brought to a sudden chill.

ON THE RUINS OF A STONE PUEBLO ON THE ANIMAS
RIVER IN NEW MEXICO; WITH A GROUND PLAN.

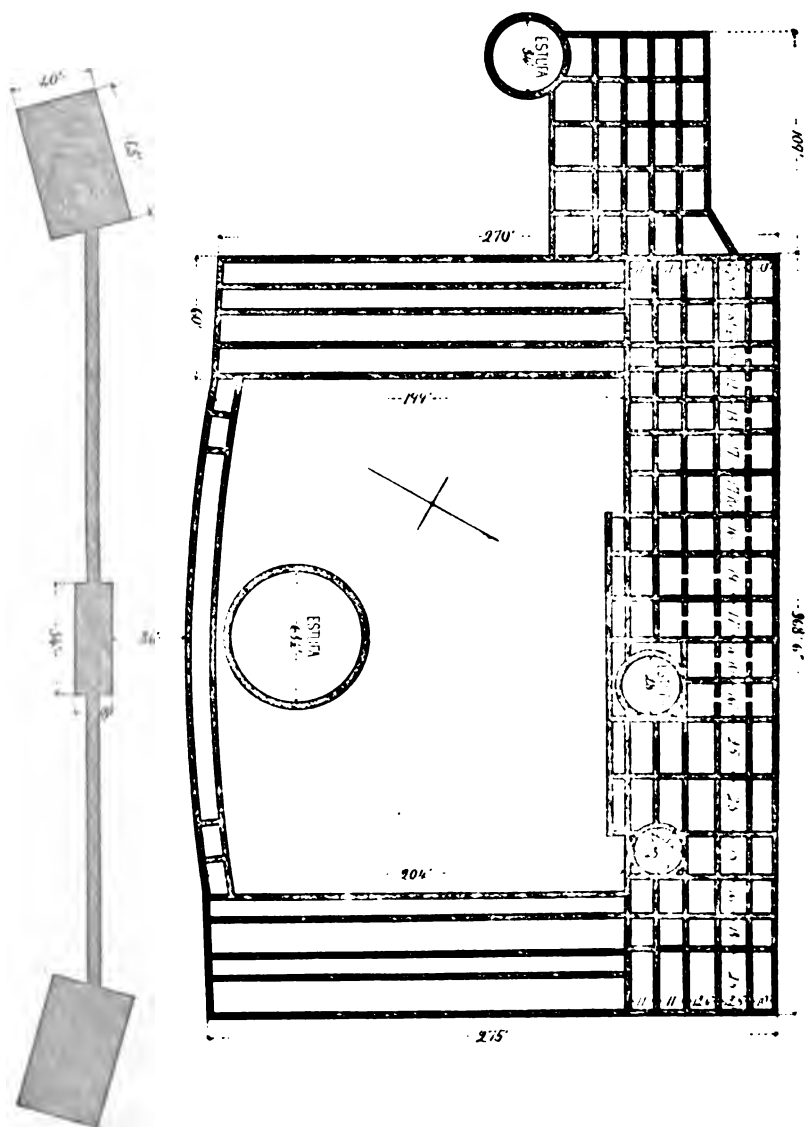
BY HON. LEWIS H. MORGAN.

THE progress made in house architecture by the most advanced Indians of our country is quite remarkable. It is shown by the use of stone, partially dressed, and laid in walls; in the use of a species of mortar having an adhesive bond; and in the construction of houses several hundred feet long, and four and five stories high. The largest of these houses contained 300, 400, and in some few cases, more than 500 apartments, each of which houses would accommodate from 500 to 1000 persons—in fact, a tribe of Indians. They were joint tenement houses of a peculiar style and plan and in the nature of fortresses, designed as places of residence for large numbers of persons intimately related; and to be, at the same time, places of security, capable of defence in case of attack.

The Pueblo House of Stone is the highest constructive work of the Village Indians of North America. These houses differ among themselves in character and design, and in the extent of their accommodations. The best specimens are found in ruins in Yucatan, where, according to Stephens, the stones are dressed on their faces, jointed and laid in courses. We are also assured by the same author that the stones were laid in mortar composed of lime and sand, the correctness of which statement we are disposed to question. In dressing this stone flint implements only were used. The finest of these Yucatan edifices were but one story high, and without fire places or chimneys. They were inferior in the extent of their accommodations to the Pueblo Houses in New Mexico. The largest houses ever constructed by the Village Indians in North America are still found in New Mexico in ruins.

The Pueblo Houses in New Mexico also differ among themselves in the materials used in their construction. Some are of adobe

FIG. 1.



Ground Plan of Ruins on the Animas River, New Mexico.

brick; some are of cobble stone and adobe mortar, or a mixture of stones with natural faces and cobble stones, and the same mortar; while others are of stone on both faces of the walls throughout all the rooms, and the stones laid in adobe mortar. Such was the masonry of the Pueblo about to be described, so far as standing walls remain to attest its character.

The Pueblo, of which the Ground Plan is shown (Fig. 1), is one of four situated within the extent of one mile on the west side of the Animas River in New Mexico, about twelve miles above its mouth. Beside these four, there are five other smaller ruins of inferior structure within the same area. This Pueblo was five, or perhaps six stories high, consisting of a main building, three hundred and sixty-eight feet long, and two wings, two hundred and seventy feet long, measured along the external wall on the right and left sides, and one hundred and ninety-nine feet measured along the inside from the end back to the main building. A fourth structure crosses from the end of one wing to the end of the other, thus enclosing an open court. It was of the width of one and perhaps two rows of apartments, and slightly convex outward, which enlarged somewhat the size of the court. The main building and the wings were built in the so-called terraced form; that is to say, the first row of apartments in the main building, and in each wing on the court side, were but one story high. The second row back of these were carried up two stories high, the third row, three stories, and so on to the number of five stories for the main building and four for each wing. The external wall rose forty or fifty feet where the structure was five stories high and but ten feet on the court side, including a low parapet wall where the structure was but one story high. There was no entrance to these great structures in the ground story. After getting admission within the court, they ascended to the roof of the first row of apartments by means of ladders, and in the same way, by ladders, to each successive story. As the second story receded from the first, the third from the second, and so on, each successive story made a great step, ten feet high. The apartments were entered through trap doors in the roof of each story, the descent being by ladders inside. In some places, without doubt, the upper stories were entered by doorways from the roof of the story in front.

The two wings are a mass of ruins. Pit holes along the summit

show the forms of the rooms with plain traces of the original walls here and there; and excavations, made by curious settlers, have opened a number of rooms in the ground story of one of the wings. These we entered and measured. Some of the rooms were faced with stone, i. e. we found a stone wall regularly laid up, as was the case in the main building, as will elsewhere be shown. Some of the walls in these rooms were of cobble stone and adobe; others were of stone with natural faces and cobble stone intermixed. We saw no wall of adobe brick alone. The fallen walls formed a mass about twelve feet deep over the site of the wings, being the deepest on the outside, and thinning out on the court side.

The mass of material used in the construction of these edifices was very great, and surprises the beholder. It is explained in part by the thickness of the walls. We measured a number of them. They were 2 feet 4 inches; 2 feet 6 inches; 2 feet 9 inches; 3 feet, and in rare cases 3 feet 6 inches thick. None measured less than 2 feet.

The main building was originally the best constructed part of the edifice, it may be supposed, because a part of it now remains standing. The walls of the first story, of some part of the second, and, in some places, of a part of the third story, forming the second row of apartments from the outside, are still standing; and rise about twenty-five feet from the ground. The measurements of the second row of apartments, as shown in the diagram, were from the standing walls, and were made in the second story.

The first, or basement story is filled up with the rubbish of the fallen walls, ceilings, and floors, in the second row of apartments named. In some cases they are full above the line of the original ceilings, in others nearly up to them. The main ceiling beams were of yellow cedar from eight to twelve inches in diameter, usually three and four in number, and were placed across the narrow way of the room. Stubs of these beams still remain in the walls parallel with the court. Just above the line of these beams in the other two walls were the ends of a row of poles about four inches in diameter, which passed transversely across the cedar beams. Stubs of these poles, broken off short at the line of the walls, still remain in place. Upon these poles was, originally, thin pieces of split cedar limbs, and then the floor of adobe mortar, four or five inches thick. We thus get the position and

height of the floor of the first and second stories, which were about nine feet six inches for the ground story, and nine feet for the second story.

The external wall of the main building has fallen the entire length of the structure. As these ruins are resorted to by the few settlers in the valley as a stone quarry to obtain stone for foundations to their houses and barns, and for stoning up their wells, the loose material is being gradually removed; and when the standing walls are more convenient to take, they will be removed also. One farmer told me he thought that one quarter of the accessible material of this and the adjacent stone Pueblo had already been removed. It is to be hoped that the number of these settlers inclined to Vandalism will not increase.

A part of the partition walls which connected the outside wall with the next parallel wall is still standing where the wall last named rises above the second story. They stand out for three or four feet like buttresses against the wall, and show the masonry of the parallel and transverse walls was articulated; that the partition walls were continuous from front to rear; and that the walls of the several stories rested upon each other. All this is seen by a bare inspection of the walls as they now stand.

The masonry itself is the chief matter of interest in these structures. Every room in the main building was faced with stone on the four sides, having an adobe floor, and a wooden ceiling. Each room had, as far as walls now remain to show, two doorways through the walls parallel with the court, and four openings about twelve inches square, two on the side of each doorway, near the ceiling. These openings were for light and ventilation. In a limited sense it may be said that the stones were dressed, and also that they were laid in courses; but in the high and strict meaning of these terms, neither is true. The stones used were small and of different sizes. Sometimes they were nearly square, from six to eight inches on a side; sometimes a foot long by six inches wide. The latter is the size of the stones used at Uxmal and Chichen Itza, according to Norman. In some cases longer and thicker stones were used without any attempt to square the ends. In some instances thin pieces of stone were employed with parallel faces. In all cases the stone was a sandstone, now of a reddish brown color. It is the prevailing stone in the bluffs of the Animas River, and of all the

rivers parallel with it running into the San Juan, as far as personal observation enabled me to judge. It is a soft rather than a hard stone, usually of a buff color when first quarried, and some of it has decayed in the using. The wasted and weather-worn appearance of some of these stones would otherwise indicate a very great age for the structure. With stone of the size used a good face can be formed by simple fracture, and a joint sufficiently close may be made by a few strokes with a stone maul. If finer work was aimed at, it must have been accomplished by rubbing the stones to a face. But this work is sufficiently explained by the former processes. In the row of apartments and stories named, both faces of each wall were of stone, so that all of the apartments were of stone on the inside. They were fair walls both in masonry and workmanship, and creditable to the builders. There was an attempt to lay up these walls in courses of uniform thickness, but each course differing from the one above and below it. The attempt was only partially successful. They did not hesitate to break in upon the regularity of the courses. Some of the standing walls are now sprung; but most of them are straight, and fairly vertical, the adobe mortar being sound, and the bond unbroken.

The Indian had a string from time immemorial. With it he could strike a circle, and lay out the four sides of a quadrangular structure with tolerable correctness. It is not too much to assume that with a string and sinker attached, the Village Indian had the plumb line, and could prove his wall as well as we can. At all events, the eye still proves the general correctness of their work.

The adobe mortar of the Pueblo Indians is something more than mud mortar, although far below a mortar of lime and sand. Adobe is a kind of finely pulverized clay with a bond of considerable strength by mechanical cohesion. In southern Colorado, in Arizona, and New Mexico, there are immense tracts covered with what is called adobe soil. It varies somewhat in the degree of its excellence. The kind of which they make their pottery has the largest per cent. of alumina, and its presence is indicated by the salt weed which grows in this particular soil. This kind also makes the best adobe mortar. The Indians use it freely in laying their walls, as freely as our masons use lime mortar; and although it never acquires the hardness of cement, it disintegrates slowly. The mortar in these walls is still sound, so that it re-

quires some effort of strength to loosen a stone from the wall, and remove it. But this adobe mortar is adapted only to the dry climate of southern Colorado, Arizona, and New Mexico, where the precipitation is less than five inches per annum. The rains and frosts of a northern climate would speedily destroy it. To the presence of this adobe soil, found in such abundance in the regions named, and to the sandstone of the bluffs, where masses are often found in fragments, we must attribute the great progress made by these Indians in house building.

The exclusive presence of this adobe mortar in all New Mexican structures of the aboriginal period shows that the tribes of New Mexico were then ignorant of a mortar of lime and sand. And here a digression may be allowed to consider whether a cement of this grade was known to the aborigines. Theoretically, the use of a mortar composed of quick lime and sand, which gives a cement chemically united, would not be expected of the Indian tribes either in North or South America. There is no sufficient proof that they ever produced a cement of this high grade. It requires a kiln, artificially constructed, and a concentrated heat to burn limestone into lime, supposing they had learned that lime could be thus obtained, and some knowledge of the properties of quick lime before they reached the idea of a true cement. The Spanish writers generally speak of walls of lime and stone, thus implying a mortar of lime and sand. Thus Bernal Diaz speaks of the great temple in the Pueblo of Mexico as surrounded "with double enclosures built of stone and lime."¹ Clavigero remarks that "the houses of lords and people of circumstances were built of stone and lime."² Again, "the ignorant Mr. De Pau denies that the Mexicans had either the knowledge, or made use of lime; but it is evident from the testimony of all the historians of Mexico, by tribute rolls, and above all, from the ancient buildings still remaining, that all these nations made the same use of lime as all the Europeans do."³ In like manner, Herrera, speaking of Zempoala, near Vera Cruz, remarks that the Spaniards, entering the town, found "the houses [were] built of lime and stone,"⁴ and again speaking of houses in Yucatan, he remarks that "at the

¹ The true history of the Conquest of Mexico, Kentinge's Translation, Salem, Ed. 1803, Vol. I, p. 208.

² History of Mexico, Cullen's Trans. Phila. Ed. 1817, Vol. II, p. 232.

³ *Ib.* Vol. II, p. 237.

⁴ History of America, Stevens' Trans. Lond. Ed. 1725, Vol. II, p. 266.

place where the encounter happened, there were three houses built of lime and stone."⁵ These several statements can hardly be said to prove the fact. Mr. John L. Stephens, in speaking of the ruins at Palenque, is more explicit. "The building was constructed of stone, with a mortar of lime and sand, and the whole front was covered with stucco, and painted."⁶ The back wall of the Governor's house at Uxmal, is 9 feet thick through its length of 270 feet. In this wall, by means of crowbars, "the Indians made a hole 6 and 7 feet deep, but throughout the wall was solid, and consisted of large stones imbedded in mortar, almost as hard as rock."⁷ At the ruins of Zayi, there was one row of ten apartments, 220 feet long, called the Casas Cerrada, or closed house, because the core over which the triangular ceiling was constructed had not been removed when the house was abandoned, of which Stephens says, "we found ourselves in apartments finished with the walls and ceilings like the others, but filled up (except so far as they had been emptied by the Indians,) with solid masses of mortar and stones."⁸ Norman speaking of the ruins of the House of the Cacique at Chichen, remarks, "that the wall is made of large and uniformly square blocks of limestone, set in mortar, which appears to be as durable as the stone itself."⁹ Elsewhere, speaking of the ruins of Yucatan generally, he observes, "the stones are cut in *parallelopipeds* of about 12 inches in length and 6 in breadth, the interstices filled up of the same materials of which the terraces are composed."¹⁰ That these tribes used mortar of some kind in their stone walls cannot be doubted, but these several statements do not prove the use of quick lime, which is the main question. Mr. Stephens' statement satisfied me until I saw the New Mexican Pueblos. These show that a very efficient mortar can be had without the use of lime. The Indians of Mexico and the coast tribes near Vera Cruz plastered their houses externally with gypsum which made them a brilliant white, and the stucco used upon the inner walls of houses in Chiapas and Yucatan was not unlikely made of gypsum. This mineral is abundant as well as easily treated. From it comes plaster of Paris, and from it may have come in some form the bond which held the mortar together, to the strength of which Mr. Stephens refers.

⁵ Ib. Vol. II, p. 112.

⁶ Central America, Chiapas and Yucatan, Vol. II, p. 310.

⁷ Ib. Vol. I, p. 178.

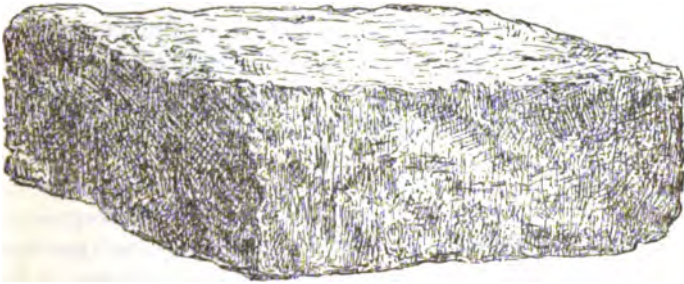
⁸ Ib. Vol. II, p. 23.

⁹ Rambles in Yucatan, p. 120.

¹⁰ Ib. page 127.

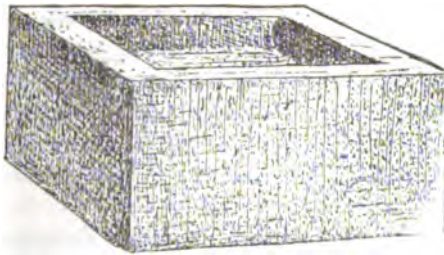
The neatness and general correctness of the masonry is now best seen in the doorways. In the standing walls of the second story, and of the first, where occasionally uncovered, there are to be seen two doorways in each room as before stated, running in all cases across the building from the court side toward the external wall, and never in the direction of its length. These doorways measured some 3 feet 2 inches in height by 2 feet 6 inches in width, and others 3 feet 4 inches by 2 feet 7 inches.

FIG. 2.



Stone from Doorway.

FIG. 2. a.



A finished block of sandstone for comparison with Fig. 2.

The stone used in these doorways are rather smaller than those in other parts of the wall, but prepared in the same manner.

I brought away two of these stones, taken from the standing walls of the main building, as samples of the character of the work with respect to size and dressing. Fig. 2 represents one of them, engraved from a photograph. It measures 8 inches in its greatest length by 6 inches in its greatest width, and it is $2\frac{3}{4}$ inches in thickness. The upper and lower faces of the stone are substantially, but not exactly, parallel. It also shows one angle, which

is substantially, but not exactly, a right angle; and it was so adjusted that the long edge was on the doorway, and short one in the wall of a chamber or apartment, with the right angle at the corner between them. This stone was evidently prepared by fracture, probably with a stone maul, and the regularity of the breakage was doubtless partly due to skill and partly to accident. It shows no marks of the chisel or the drove, or of having been rubbed, and where the square is applied to the sides or angles, the rudeness of the stone is perfectly apparent.

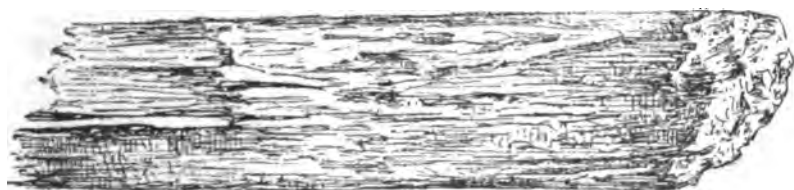
Fig. 2a, represents a sandstone cut by American skilled workmen in the form of a brick, and it is intended to show by comparison the great difference between the dressed stone of the civilized man and the ruder stone of the mason in the condition of barbarism. The comparison shows that no instruments of exactness were used in the stone work of the Pueblo, and that exactness was not attempted. But the accuracy of a practical eye and hand, such as their methods afforded, was reached, and this was all they attempted. With stones as rude as that shown in the figure, a fair and even respectable stone wall may be laid. The art of architecture in stone is of slow and difficult growth. Stone prepared by fracture with a stone hammer, precedes dressed stone, which requires metallic implements. In like manner mud mortar or adobe mortar precedes a mortar of lime and sand. The Village Indians of America were working their way experimentally, and step by step, in the art of house building, as all mankind have been obliged to do, each race for itself; and the structures the Village Indians have raised in various parts of America, imperfect as they are by contrast, are highly creditable to their intelligence.

Stone lintels were not used for these doorways, as stones 3 feet long would have been required. No stones of half that length are to be seen in any of the walls. They had, however, the idea of a stone lintel, for they used them in this structure over the foot square openings for light and air. We found a stone lintel over an opening 18 inches wide in a Cliff House on the Mancos River. This was so firmly imbedded that we found its removal impossible. They used for a lintel six round cedar cross pieces (Fig. 3), each about 4 inches in diameter, and now perfectly sound.

In some of these doorways we noticed a peculiar feature. On the side toward the external wall, one and sometimes two of these

wooden lintels were placed, 4 and sometimes 6 inches lower than the remainder, so that on entering from the outside room into the second room, the top of the doorway rose higher as the room was entered. A necessity was experienced to save the head from bumps, and the wonder is that it did not occur to them to raise the doorways to the height of the body. As the doorways were always open, no doors being used, it may well be that larger

FIG. 3.



Section of Cedar Lintel.

openings would have created stronger currents of air through the building than they wished. The ends of these lintels were hacked off by stone implements of some kind.

The peculiar arrangement of the doorways tends to show that this great house was divided into sections by the partition walls extending from the court to the exterior wall; and that the rooms above were connected with those below by means of trap doors and ladders. If this supposition be well founded, the five rooms on the ground floor, from the court back, communicated with each other by doorways. The four in the second story communicated with each other in the same manner, and with those below through trap doors in the floors. The three rooms in the third story communicated with each other by doorways, and with those below as before. The same would be true of the two rooms of the fourth story. It seem probable that the connected rooms were occupied by a group of related families.

We afterwards found the same thing, nearly, exemplified in the present occupied Pueblo of Taos in New Mexico. Here there are two large edifices of adobe brick, five and six stories high respectively, and about two hundred yards apart. We found that the families lived in the second and upper stories, and used the rooms below them for storage and for granaries. Each family had 2, 4, and 6 rooms, and those who held the upper rooms held

those below. The whole number of Indians now living in the two houses is about four hundred.

In the south wing before mentioned, several rooms on the ground floor are still perfect, with the ceilings in place upholding the rubbish above. The openings or trap doorways of two of these rooms are still perfect, but the ladders are gone. The rooms had been opened, as elsewhere stated, by late explorers. One of these trap doors measured 16 by 17 inches, and the other 16 inches square. Each was formed in the floor by pieces of wood put together. The work was neatly done. These rooms were smaller than the rooms above. Some were as narrow as 4 feet 6 inches, others 6 feet, showing that one room had been divided into two. These basement rooms were probably occupied for storage exclusively, whence their division. They were dark, except as light entered through the trap door way from above.

The structure connecting the wings and bounding the court was evidently a single or double row of apartments. This is shown by the amount of fallen material which is larger than a wall would require, and from pits or depressions which plainly marked the outline of apartments.

There are two circular Estufas in the main building, one 23 feet and the other 28 feet in diameter. A part of the wall of the first Estufa is still standing. It is of stone, mostly of blocks about 5 inches square, and laid in courses, with considerable regularity. The work is equal to the best masonry in the edifice. In the open court, and near the outer structure, bounding it in front, is another Estufa of great size $63\frac{1}{2}$ feet in diameter. These Estufas, which are used as places of council, and for the performance of their religious rites, are still found at all the present occupied Pueblos in New Mexico. There are 6 at Taos, 3 at each house, and they are partly sunk in the ground by an excavation. They are entered through a trap doorway in the roof, the descent being by a ladder.

Outside the front wall closing the court, and about 30 feet distance therefrom, are the remains of a low wall crossing the entire front and extending beyond it. The end structures were about 65 feet long by 40 feet wide, while at the centre was a smaller structure, 54 feet long by 18 wide. All its parts were connected. It was evidently erected for defensive purposes; but it is impossible to make out its character from the remains.

One wing is several feet longer than the other, and the wall on

the court side is about 20 feet longer than the opposite exterior wall, thus showing that they used no exact measurements.

There were no fireplaces with chimneys in this structure. There are none in the ruins in Yucatan and Central America. It is a fair inference, therefore, that chimneys were entirely unknown to the aborigines at the time of their discovery. They have since that time been adopted into the old Pueblo houses from American or Spanish sources. They are placed in one corner of the room. We saw recently at Taos two chimneys and two fireplaces in one and the same room, one for cooking, and the other for a fire to warm the room; proof conclusive that they were not to the chimney born. They were in an apartment of one of the principal chiefs.

In a number of rooms are recesses like niches left in the wall, about 2 feet 6 inches wide and high, and about 18 inches deep. These furnished places to set household articles in, in the place of a mantel, or shelf. We afterwards saw niches precisely similar at Taos, and thus used.

It remains to consider the number of rooms or apartments contained in this great edifice. It is plain that it was built in the terraced form, the second story set back from the first, the third from the second, and so on to the last which was a single row of apartments, on the top somewhere, but not necessarily on the back side. Pueblos were not entirely uniform in this respect. The edifice at Taos recedes in front and rear and even upon the sides. This may have been built in the same way, but it can neither be proved or disproved from the ruins. The number of apartments would not vary much whether the upper stories were symmetrically formed or irregularly. If symmetrical, the main building contained 260 apartments, and each wing 70, making the computation for the latter by area, and from the number of depressions still discernible thus making an aggregate of 400 rooms.

The house was a fortress, proving the insecurity in which the people lived. It was also a joint tenement house of the aboriginal American model, indicating a plan of life not well understood. It may indicate an ancient communism in living, practised by large households formed on the principle of kin. In such a case the communism was limited to the household as a part of a kinship.

Those familiar with the remains of Indian Pueblos in ruins will

recognize at once the resemblance between this Pueblo, and the Stone Pueblos in ruins on the Rio Chaco in New Mexico, about thirty miles distant from these ruins, particularly the one called Hungo Pavia so fully described by Gen. J. H. Simpson. There is one particular in which the masonry agrees, viz., in the use of courses of thin stones, about half an inch in thickness (Fig. 4),

FIG. 4.



Thin stone from wall.

sometimes three together, and sometimes five and six. These courses are carried along the wall from one side to the other, but often broken in upon. The effect is quite pretty. The stone represented in the figure, measures 6 inches in length by $\frac{1}{2}$ an inch in thickness. Gen. Simpson found the same courses of thin stones, and even thinner, and comments upon the pleasing effect they produced.

This edifice was a credit to the skill and industry of the men among the Village Indians; for the men, and not the women, were the architects and the masons, although the women undoubtedly assisted in doing the work. Women brought stone and adobe and cedar, and made adobe mortar, without a doubt, as they still do. One of the hopeful features in their advancement was the beginning of the reversal of the old usage which put all labor upon the women. It is now the rule among the Village Indians for the men to assume the heavy work, which was doubtless the case when this Pueblo was constructed. They cultivated maize, beans, and squashes, in garden beds, and irrigated them with water drawn from the river by means of a canal, and passed in several smaller streams through their gardens. The men now engage in the work of cultivation. This is a sure sign of progress.

Off the south wing of the building, and without it, are the remains of an additional building, large enough for twenty or thirty rooms on the ground, some part of which were, doubtless, carried up two or more stories high; But it is a mass of indistinct ruins about which little can be said, except that some of the rooms were unusually large. This may have been the first building constructed, and the one occupied while the Stone Pueblo was

being constructed. Near this Pueblo, about 500 feet distant, was another stone Pueblo of nearly equal size. Some of its walls are still standing, and a number of its rooms are still perfect. At the distance of a mile, and on the bank of the Animas River, was a third, and equally large Pueblo, which is a mass of ruins. Not a wall is standing above the mass. Between this, and the Pueblo first described, and near the river, are the ruins of a fourth Pueblo, smaller in size.

The valley of the Animas River is here broad and beautiful, about three miles wide. The river passes through the centre of the valley. The cliff, on the east side of the level plain, is bold and mountainous, rising from 1500 to 2000 feet high; while on the west side, the valley is bordered with the mesa formation in two benches, one rising back of the other, and both as level as a floor, with the highlands forming the divide between the Animas and La Plata Rivers in the distance.

From the number and size of the houses, there was probably a population of at least 5000 persons at this settlement, living by horticulture. It is not now known by what tribe of Indians these Pueblos were inhabited or constructed.

These Pueblos, newly constructed, and in their best condition, must have presented a commanding appearance. From the materials used in their construction, from their palatial size and unique design, and from the cultivated gardens by which they were doubtless surrounded, they were calculated to impress the beholder very favorably with the degree of culture to which the people had attained. It is a singular fact that none of the occupied Pueblos in New Mexico at the present time are equal in materials or in construction with those found in ruins. It tends to show a decadence of art among them since the period of European discovery.

As a conclusion to this article, I wish to call attention to the San Juan district, to its numerous ruins, and to its importance as an early seat of Village Indian life. These ruins and those of a similar character in the valley of the Chaco about sixty miles distant therefrom, together with numerous remains of structures of cobble stone and adobe in the San Juan valley, in the Pine River valley, in the La Plata valley, in the Animas River valley, and westerly in the Montezuma valley, among the latter of which are

the ruins of several large pueblos of stone,¹¹ suggest the probability that the remarkable area within the drainage of the San Juan River and its tributaries has held a prominent place in the first and most ancient development of Village Indian life in America. The evidence of Indian occupation and cultivation throughout the greater part of this area is sufficient to suggest the hypothesis that the Indian here first attained to the condition of the Middle Status of Barbarism; and sent forth the migrating bands who carried this advanced culture to the Mississippi valley, to Mexico and Central America, and not unlikely to South America as well.

Indian migrations are gradual outflows from an overstocked area, followed by organization into independent tribes, and continuing through centuries of time, until the ethnic life of each tribe is expended, or a successful establishment is finally gained in a new and perhaps far distant land. They planted gardens and constructed houses as they advanced from district to district, and removed as circumstances prompted a change of location.

Since the cultivation of maize and plants precedes, or is synchronous with this stage of development, it leads to the supposition that maize must have been indigenous in this region, and that it was here first brought under cultivation. There are some facts that seem to favor this hypothesis.¹² At present I wish to

¹¹ One of these near the base of the Ute Mountain, north east side, and in the Montezuma valley so-called, which I visited in 1878, was situated upon a ledge of rock 20 feet high, and in two sections interrupted by a break in the rock about 20 feet wide used as a reservoir of water. The principal building was 510 feet long, and measured through at the north end 110 feet, 80 feet near the middle, and 18 feet at the south end. The other section was 110 feet in front, and 80 feet wide. Both were of stone, some of the walls of which are still standing. The main building contained a round tower, above 40 feet in diameter, and at least two stories high.

¹² Where maize was indigenous is unknown, except that it was somewhere upon the American continent. It is the only cereal America has given to the world. At the period of European discovery, it was found cultivated and a staple article of food in a large part of North America and in parts of South America. There were also found beans, squashes and tobacco, with the addition in some areas of peppers, tomatoes, cocoa and cotton. The problem of the place of the origin of maize is probably insoluble, but speculations are legitimate, and such are all that I have to offer.

The fecundity of plant life in the Rocky Mountains is remarkable, particularly on the southern slopes, where they subside into the mesa, or table land formation, north of the San Juan river. The Continental divide is in the eastern margin of this region. The first suggestion I wish to make is that all the cereals and cultivated plants must have originated in the great continental mountains of the two hemispheres, and have propagated themselves along the water courses of the mountain valleys down to the plains traversed by the great rivers formed by these mountain tributaries. All the cereals belong to the family of the Grasses (*Graminæ*), and each of them, doubtless, is the last of a series of antecedent forms.

I saw rye, barley, and oats growing wild by self-propagation in the mountain valleys

call attention such existing evidence as points to the San Juan district as the anterior home of a number of historic Indian tribes.

1. *The Mound Builders.* Although these tribes had disappeared at the epoch of European discovery, and cannot be classed with any known Indian stock; their condition as horticultural tribes, their knowledge of some of the native metals, and the high character of their stone implements and pottery place them in the class of Village Indians. The nearest region from which they could have been derived is New Mexico. There is no reason for referring them to the San Juan region more than to the nearer country of the Rio Grande, unless it should appear probable that the inhabitants of the latter valley were themselves migrants from the same region. But there are good reasons for deriving the

of Colorado the present season; also the wild pea, whose stunted seeds had the taste of the cultivated pea. Turnips, onions, tomatoes and hops are found growing wild in the Pine river valley; and the pie plant or rhubarb is said to grow luxuriantly in the Elk mountain valleys. I also saw wild flax and the gourd growing by self-propagation in the valley of the Animas. Currants, gooseberries, raspberries, and strawberries are found in the mountain valleys in numerous places, together with flowering plants of many species and varieties. Tiny forms of flowering plants are to be seen above patches of snow in places where the snow had recently melted. This fecundity of plant life from 10 to 12,000 feet above sea level, and the relation of these mountain tributaries to the San Juan, which runs from east to west, not remotely from the base of these mountains, in such a manner as to unite and receive into its lap, so to express it, the vegetable wealth developed in these mountain chains, are facts that force themselves upon the attention of the observer.

The altitude of the San Juan valley ranges from 7,095 ft. at Pagosa Springs to 5,970 ft. at the mouth of the Animas, and diminishing to 4,446 feet near the point where it empties into the Colorado (Hayden's Atlas of Colorado, Sheet 111). The altitude at Conejos is 7,880 feet (Ib., Sheet 111), which is about as great an elevation as admits of the successful cultivation of maize. I noticed in a field of maize growing at Conejos, that the stock grew only about three feet high, and the fact that the ear grew out of it but six inches from the ground. Specimens of the ear we obtained showed that it was about five inches long, with the kernel small and flinty. The ear is in four colors, white, red, yellow, and black, each being one or the other of these colors. In a few cases, two colors were intermixed in the same ear. It seemed probable that this was the primitive maize of the American aborigines, from which all other varieties have been developed. A few cobs we found at a Cliff House on the Mancos river corresponded with the Conejos ear in size, and was probably the same variety. Afterwards at Taos I found the same ear in white, red, yellow and black; the staple maize now cultivated at this pueblo, but much larger in size. I brought away several fine ears saved for seed. One black ear measured twelve inches in length, with twelve rows of kernels, while the white variety, both at Conejos and Taos, had each fourteen rows.

Finally, a dry country, neither excessively hot nor moist, like the San Juan region, would seem to be most favorable for the development and self-propagation of maize as well as plants until man appeared for their domestication. These are but speculations, but if they should prompt further investigations concerning the place of nativity of this wonderful cereal, which has been such an important factor in the advancement of the Indian family, and which is also destined to prove such a support to our own, these suggestions will not have been made in vain.

mound builders from the Village Indians in some part of New Mexico.

11. *The Mexican Tribes.* The seven principal tribes of Mexico, called collectively the Nahuatlacs, spoke dialects of the same language, and all alike had a tradition that their ancestors came from the North, and that the separate tribes came into Mexico at long intervals apart. They arrived in the following order as to time: 1, Sochomilcos; 2, Chalcas; 3, Tepanecans; 4, Tescucans; 5, Tlatluicans; 6, Tlascalans; 7, Aztecs or Mexicans. They settled in different parts of Mexico. The Cholulans, Tepeacas, and Huexatsincos, spoke dialects of the Nahuatlac language, and were severally subdivisions of one or the other preceding tribes. They had the same tradition of a northern origin. These several tribes were among the most prominent in Mexico at the period of Spanish discovery. Some of the tribes of Yucatan and Central America also had similar traditions of an original migration of their ancestors from the North.

Acosta, who visited Mexico in 1585, and whose work was published at Seville in 1589, states the order of the migration of the Mexican tribes as above given, and further says that they "come from other far countries which lie toward the North, where now they have discovered a kingdom they call New Mexico. There are two provinces in this country, the one called *Aztlan*, which is to say, a place of Herons [Cranes], and the other *Tecullhuacan*, which signifies a land of such whose grandfathers were divine. The Navatlacas [Nahuatlacs] point their beginning and first territory in the figure of a cave, and say they came forth of seven caves to come and people the land of Mexico."¹³ The same tradition, substantially is given by Herrera,¹⁴ and also by Clavigero.¹⁵ If by the word *Aztlan* was intended "place of Cranes;" and on the supposition that these tribes migrated from the San Juan region, the reasons for the designation are justified. The Sandhill Crane (*Grus Canadensis*) is one of the largest and most conspicuous of American birds, and is still found from the British Possessions to New Mexico, and winters in the latter. I saw a pair of these great birds the present season in the valley of the

¹³ The Natural and Moral History of the East and West Indies, London Ed. 1604. Grimstones Trans. pp. 497, 501.

¹⁴ General History of America, London Ed. 1725. Steven's Trans. III, 188.

¹⁵ History of Mexico. Cullen's Trans. 1, 119.

Animas River. Mr. Coues remarks, that "thousands of Sandhill Cranes repair each year to the Colorado River valley, flock succeeding flock along the course of the great stream from their arrival in September until their departure the following spring. Taller than the Wood Ibises or the largest Herons with which they are associated the stately birds stand in the fore-ground of the scenery of the valley. * * * Such ponderous bodies moving with slowly beating wings give a great idea of momentum from mere weight, a force of motion without swiftness; for they plod along heavily, seeming to need every inch of their ample wings to sustain themselves."¹⁶ It is an Indian trait to mark localities by some conspicuous feature or fact, and the selection of the Sandhill Crane to indicate their home country would have accorded with Indian usages.

Again, Herrera, who presents the current traditions, observes, that "these peoples painted their original in the manner of a cave, and said they came out of seven caves to people the country of Mexico. * * * After the six above mentioned races departed from their country, and settled in New Spain, where they were much increased, the seventh race being the Mexican nation, a warlike and polite people, who adoring their god *Vitsilpuztli*, he commanded them to leave their own country, promising them they should rule over other races in a plentiful country, and much wealth."¹⁷

It is worthy of remark that the cave dwellings or cliff houses are in the San Juan district, the most of them being on the Mancos river, and on the western portion of the San Juan. These traditions may in fact refer to these cave dwellings as the original homes of their ancestors, and at the same time without precluding the supposition that they also constructed and inhabited some of the pueblo structures now in ruins in other parts of the same area. All the early accounts concur in representing the Aztecs or Mexicans, when they first arrived in Mexico, as subsisting by the cultivation of maize and plants, as constructing houses of stone, and with a religious system which recognized personal gods. These statements are probably true. They had attained to the status of village Indians. This again renders New Mexico their probable original home as the only area in the north where ruins of structures of tribes so far advanced have been found.

¹⁶ *Birds of the Northwest*, 1874, p. 534.

¹⁷ *History of America*, 115, p. 188-190.

The San Juan district is remarkably situated in its geographical relations. This river, rising in the crests of the high mountains forming the watershed or divide between the Atlantic and Pacific, flows southward until it enters the tableland formation through which it flows in a southwesterly and then northeasterly direction, making a long, sweeping curve in New Mexico and Arizona, after which it runs westerly to its confluence with the Colorado. It receives from the north the following tributaries, rising like itself in the high mountains, the Piedra, Pine river (Los Pinos), the Animas, the La Plata, the Mancos, the Mc Elmo, now dry, and the Hovenweep and Montezuma creeks, now nearly dry. Its southern tributaries are the Navajo, Chaco, and De Chelly. West of the Mancos river, in the region of the Ute mountain, is the so-called Montezuma valley, a broad and level plain, ten or more miles wide in its widest expanse. It has no flowing stream through it at present, and there is no certainty that it ever had. The Montezuma valley, so named by General Heffenan, of Animas city, is about fifty miles long from its north end to the San Juan river on the south, and is sprinkled over with ruins of pueblos, some of stone and others of cobble stone and adobe mortar. The Round Towers with two and three concentric walls are found in this valley. There is one at the rancho of Mr. Henry L. Mitchell at the commencement of the Mc Elmo cañon which we examined, and a second and larger one at the great stone pueblo, about four miles below, before mentioned, which we also examined. These towers are of stone, about five inches square on the face, laid substantially in courses, and they are only found in the San Juan region. They reappear in South America, at Ollanty tambo and Pisac. In this valley, without water, except in pools and springs, and with a slight rainfall during the year, Mr. Mitchell at the time of our visit, was successfully cultivating wheat, oats, maize, and the garden vegetables. Near his house were the ruins of nine pueblo houses in a cluster. These were made of cobble stones and adobe mortar, and a mile below them were the ruins of another cluster of about the same number. About four miles toward the Ute mountain, are the ruins of the great stone pueblo, with the triple round tower before mentioned. The plain stretches southward thirty-six miles to the San Juan, and Mr. Mitchell assured us that similar ruins existed in a number of places throughout its entire extent.

With such evidences of ancient occupation, here and elsewhere in the San Juan county, we are led to the conclusion that the Village Indians increased and multiplied in this area, and that at some early period there was here a remarkable display of this form of Indian life, and of house architecture in the nature of fortresses, which must have made itself felt in distant parts of the continent. On the hypothesis that the valley of the Columbia was the seed land of the Ganowanian family, where they depended chiefly upon a fish subsistence, we have in the San Juan county, a second centre and initial point of migrations founded upon farinaceous subsistence. That the struggle of the village Indians to resist the ever continuous streams of migration flowing southward along the mountain chains, has been a hard one through many centuries of time, is proved by the many ruins of abandoned or conquered pueblos which still mark their settlements in so many places. At the present moment there is not a Village Indian in the San Juan district. It is entirely deserted of this class of inhabitants.

That the original ancestors of the principal historic tribes of Mexico once inhabited the San Juan country is extremely probable. That the ancestors of the principal tribes of Yucatan and Central America owe their remote origin to the same region is equally probable. And that the Mound Builders came originally from the same country, is, with our present knowledge, at least a reasonable conclusion.

Indian migrations have occurred under the influence almost exclusively, of physical causes, operating in an uniform manner. These migrations, involving the entire period of the existence here of the inhabitants of both American continents, will be found to have a common and connected history. A study of all the facts may yet lead to an elucidation and explanation of these migrations with some degree of certainty. The hypothesis that the valley of the Columbia River was the seed land of the Ganowanian family holds the best chance of solving the great problem of the origin and distribution of the Indian tribes.

[This paper was read to the American Association for the Advancement of Science, at the St. Louis Meeting, August, 1878.]

ON THE SOCIAL ORGANIZATION AND MODE OF GOVERNMENT OF THE ANCIENT MEXICANS.

BY AD. F. BANDELIER.

Two previous papers have already been devoted to some of the most prominent features of the life of the ancient Mexicans, namely : warlike customs, and their mode of distributing and occupying the soil and their rules of Inheritance.¹ The conclusions of both essays were chiefly negative, in so far as they tended to establish the non-existence of a condition which has, for three centuries, been regarded as prevailing. Thus, in the first, we have attempted to disprove the existence of a military despotism², and in the second, the existence of feudalism³ among the natives of Mexico. More positive results were, however, foreshadowed in both instances by the suggestion, if not by the demonstration, that aboriginal society in Mexico rested on a democratic principle. The present essay is intended to show—if the organization of the natives of Mexico was *not* as it is commonly represented—what that organization really was, according to our conception, and what status

¹ *Tenth Report of the Peabody Museum: "On the Art of War and Mode of Warfare of the Ancient Mexicans."* *Eleventh Report: "On the Tenure and Distribution of Lands among the Ancient Mexicans, and the Customs with Respect to Inheritance."*

² *"Art of War,"* pp. (127, 128, and 161).

³ *"Tenure of Lands,"* (pp. 418 and 448). In both instances, as well as in the present discussion, the works of the Hon. L. H. Morgan have furnished to the writer his points of departure and lines of investigation; besides, the distinguished American ethnologist has watched with more than friendly solicitude the progress of all these essays. If I seize the opportunity to recall here the debt of gratitude under which I stand toward him, it is coupled with the wish to express heartfelt thanks to several of my friends, to whose liberal assistance these and the preceding pages owe their existence, nearly as much as to my individual work. Let me name here, Mr. F. W. Putnam, Curator of the Peabody Museum, Col. Fred Hecker, of Summerfield, Illinois, Dr. G. Bruhl, of Cincinnati; Ohio, and the officers of the Mercantile Library at St. Louis, Missouri. Lastly, because most remote, though certainly not least, am I deeply indebted to the great documentary historian of the City of Mexico, Sr. Don Joaquín García Icazbalceta for nearly all information which could not be obtained from the usually known sources.

of progress in Institutions can be assigned to the remarkable tribe which has become so prominent in history. In other words, our object is to reconstruct the mode of government of the ancient Mexicans, the nature of its offices and dignities, and especially the principles ruling and guiding their social agglomeration.

The distinguished Mexican scholar, Manuel Orozco y Berra, explains, as well as qualifies, the condition of the aborigines of Mexico in the following manner :

" If, from the boundary-lines of the empire [of Mexico, according to his views] we now turn to the races peopling its area, we find it to be a truth undeniable that no common nor mutual tie connected these numerous and diverse tribes. Each one was independent under its chiefs."⁴

" *Geografía de las Lenguas y Carta Etnográfica de México*," por Manuel Orozco y Berra, Mexico, 1864. (Tercera Parte, IX México, p. 252). " Si de las demarcaciones del imperio pasamos á considerar las razas que lo poblaban, encontraremos como una verdad innegable que tanta tribu diversa no tenia un lazo comun de union. Cada una era independiente bajo el mando de sus señores. Las ambiciones particulares encendian la guerra, y la misma familia se fraccionaba. A su semejanza, cada pueblo tenia un gefe que de nombre reconocia al señor principal, y todas las provincias estaban subdivididas hasta formar un sistema bajo algunos puntos semejante al feudal. Rencores y odios apartaban las tribus, y la guerra era constante, porque siendo una de sus principales virtudes la valentia, no podian verse sin combatirse. Á imitacion de los orgullosos animales que sirven de diversion en los palenques. Por intento ó porque las generaciones son arrastradas aun á su pesar por la corriente de los tiempos, los Mexicanos emprendieron la tarea de reunir en un solo haz todos aquellos pueblos, de formar de ellos una nacion, y de asimilar sus intereses con los intereses del imperio. Para llevar á cabo semejante tarea era preciso, la fuerza para poder triunfar; un sistema proseguido con tino, y con tenacidad, y el tiempo bastante para que el odio se borrara y dejara nacer las simpatias. Pero la unidad que solicitaban los Mexicanos llevaba á las tribus al mas espantoso de los despotismos; el imperio era muy nuevo para haber alcanzado otra cosa que reducir á la servidumbre, sin poder contar con el amor de sus vasallos; de manera que en lugar de amigos, tenia enemigos solapados, y su grandeza era solo engañosa apariencia. En esta sazon se presentaron los conquistadores españoles. Cualquiera fuerza extraña habia de hacer vacilar al coloso; las tribus, mal halladas con la servidumbre, vieron en los invasores á quienes podrán salvarles del yugo; en su juicio rencoroso no quisieron advertir, que por alcanzar una estéril venganza aventuraban su propia existencia, y corrieron de tropel á colocarse bajo las banderas de los extranjeros." It may be interesting to compare this weighty authority with my remarks on the same subject in "*Art of War*," (pp. 100, also note 17), and "*Tenure of Lands*," (pp. 416, 417, and 418, and annotations.) The difference consists in that Sr. Orozco y Berra ascribes to the ancient Mexicans a decided tendency to "nationalize," so to say, the aboriginal people of their conquered area, to force uniformity of customs and organization upon them, and establish a true despotism. To this I beg leave to suggest in reply:—

(1). That the Mexicans, *alone*, formed only a *part* (two-fifths in amount of tribute) of that power which is commonly termed "an Empire" (El Imperio) and which was but the Nahuatl confederacy of the Mexican valley. In evidence of it I will take the liberty to quote his own words, (same part and chapter, pp. 210, 241): "El reino de Acolhuacan era el segundo en poderio; su capital era Tetzcoco, á la orilla del lago de su nombre. Pequeña hoy y sin material interes, en lo antiguo fué rival de México y

This eliminates at once the notion of a Mexican state or empire, embracing in the folds of political society⁵ all the groups of abor-

la segunda poblacion de las del Valle." Farther on, quoting *Juan Bautista Pomar*, "*Relacion de la ciudad de Tezcuco*," (MSS., belonging to Sr. Icazbalceta, and dated 1582) who says of Tezcuco: "La extension del reino era desde el mar del N. á la del Sur, con todo lo que se comprende á la banda del Poniente hasta el puerto de la Vera Cruz, salvo la Ciudad de Tluchcala y Huexotzinco," the learned ethnographer adds. (p. 242), "Juan B. Pomar fija las limites del reino con toda la exaggeracion que puede infundir el orgullo de raza. Por nuestra parte, hemos leído con cuidado las relaciones que á la monarquía corresponden, y hemos estudiado en el plano los lugares á que se refieren, y ni de las unas ni de las otras llegamos á sacar jamas que los reyes de Acolhuacan mandaron sobre las tribus vecindadas en la costa del Pacifico, no ya á la misma de México, sino aun á menores latitudes." He then enters upon a discussion of the number and names of settlements which gave tribute exclusively to Tezcuco. We can only refer to it in general here, as one of the most valuable contributions to Mexican history, and based upon authorities which ought to be published as soon as possible, some of which we mention for the benefit of students:—

(1). "*Memorial dirigido al reypor Don Hernando Pimentel Nezcoarualcuytl, cacique y gobernador de la provincia de Tezcuco, etc.*" This is the celebrated Report used by Torquemada and Fernando de Alba Ixtlilxochitl, and which the Cavaliere Boturini Benaducci owned.

(2). "*Relacion de Sempukual del corregidor Luis Obregon*," 1580, MSS.

(3). "*Relacion de Epazoyuca por el corregidor Luis Obregon*," 1580, MSS.

(4). "*Relacion de Tetzitaca por el corregidor Luis Obregon*," 1580, MSS.

(5). "*Relacion de Meztiltan por el alcalde mayor Gabriel de Chavez*," 1589, MSS.

(6). "*Relacion de Atengo por el corregidor Juan de Padilla*," 1579, MSS.

(7). "*Relacion de Ahualulca por el corregidor Gaspar de Solís*," 1580, MSS.

(8). "*Relacion de Acapistla por el alcalde mayor Juan Gutierrez de Liebana*," 1580, MSS.

(9). "*Relacion de Culhuacan por el corregidor Gonzalo Gallego*," 1580, MSS.

(10). "*Relacion de Iztapalapa por el corregidor Gonzalo Gallego*," 1580, MSS.

Since most of these valuable MSS. are the property of Sr. J. G. Icazbalceta, an early publication thereof may be hoped for.

Sr. Orozco y Berra now reaches the important conclusion:

(a). That Aculhuacan or Tezcuco had settlements tributary to it alone, (p. 246).

(b). That the "Empire" had tributaries of itself.

(c). That certain pueblos paid tribute both to Tezcuco and to Mexico, (p. 246), Epazoyuca, "pertenecieron tambien á Tetzcuco, y en el reinado de Itzcoatl quedaron por mitad para México y para Tetzcuco, á fin de que de alli sacaran los imperiales las navajas para sus macanas." Taken probably from *Relacion 3*.

The "Imperiales" were, therefore, the confederates, and the "Imperio" the confederacy. But if, within the area conquered by these confederates, each one of them received its share of tributary tribes, how could it be their task or tendency to unify or nationalize, since each of the three associates composed but a part of that power, and their association was a voluntary one?

(2). None of the confederates exercised any power over the others, beyond the exclusively military direction delegated to the Mexicans proper. "*Rapport sur les différentes classes de chefs de la Nouvelle Espagne, Par Alonzo de Zurita*," translated from the Spanish original by Mr. Ternaux Compans, and printed in 1840, by him in his "*Voyages Relations et Mémoires originaux pour servir à l'histoire de la découverte de l'Amérique*," (p. 11). "La province de Mexico étoit soumise à trois principaux chefs: celui de Mexico, celui de Tezcuco et celui de Tacopan, que l'on nomme aujourd'hui Tacuba. Tous les chefs inférieurs relevaient de ces souverains et leur obéissaient. Les trois chefs supérieurs formaient une confédération et se partageaient les provinces dont ils s'emparaient. Le souverain de Mexico avoit au dessous de lui ceux de Tezcuco et de Tacuba pour les affaires qui avoient rapport à la guerre; quant à toutes les autres, leurs puissances étoient égales, de sorte que l'un d'eux ne se mêloit jamais de

igines settled within the area tributary to the valley-tribes. Consequently we need not look beyond the tribe, for any *larger group*

gouvernement des autres," (p. 16). "Chaque souverain confirmait l'élection de ses vassaux, car, ainsi qu'on l'a déjà dit, leur juridiction était indépendante pour les affaires civiles et criminelles."

Fray Toribio de Motolinia, "Historia de los Indios de Nueva España," in Vol. I, of Sr. Icazbalceta's "Colección de Documentos, etc." (Epístola proemial, p. 5). "Después el señorío de Tetzcoco fué tan grande como el de México." (Id. p. 11) "Los de Tetzcoco, que en antigüedad y señorío no son menos que los Mexicanos." (Tratado III, Cap. VII, p. 182) "Esta ciudad de Tetzcoco era la segunda cosa principal de la tierra, y asimismo el señor de ella era el segundo señor de la tierra; sujetaba debajo de sí quince provincias hasta la provincia de Tuzapan, que está á la costa del Mar del Norte. . . . á la parte de Oriente tiene México Tenuchtitlan á una legua la ciudad ó pueblo de Tlacopan, adonde residía el tercero señor de la tierra, al cual estaban sujetas diez provincias: estos dos señores ya dichos se podrían bien llamar reyes, porque no les faltaba nada para lo ser. (p. 183) "Las de las provincias y principales pueblos eran como señores de dítado ó salva, y sobre todos eran los mas principales los dos, el de Tetzcoco y el de Tlacopan; y estos con todos los otros todo lo mas del tiempo residían en México, y tenían corte á Moteuczoma." We know, however, that the fact of residence of the head-war-chiefs of Tezcoco and Tlacopan at Mexico, is not true, though their frequent visits there on military business, and their protracted stay after the Spaniards had entered the pueblo, may explain the error. The latter passage is amended by the good father (Trat. III, cap. VIII, p. 187), as follows: "y si de esto algun señor tenía exención era el de Tetzcoco."

Fernando Cortés, Carta Segunda, (In Vedia's "Historiadores primitivos, etc." Vol. I, p. 29). Speaking of Cacamatzin, he says: "é según lo que después dél supe, era él muy cercano deudo de Mutezuma, y tenía su señorío junto al del dicho Mutezuma; cuyo nombre era Hacuinaacan." Cortés further relates that when Cacamatzin threatened to take up arms, he requested Montezuma to direct him to come to Mexico, but the chieftain of Tezcoco refused, saying, "that if they wanted something of him, they might come over on his land, where they would find out who he was, and what kind of obedience he was held to." Montezuma even was afraid, upon this reply, to suggest open violence, dissuading Cortés from it altogether. This shows clearly that the Mexicans had no authority over the Tezcucans, and even were loth to assail them.

Francisco Lopez de Gomara. Conquista de Méjico (In Vedia. Tom. I, p. 346). "Había asimismo otros muchos señores y reyes, como los de Tezcoco y Tlacopan, que no le debían nada, sino la obediencia y homenaje." Also, on the treacherous seizure of Cacamatzin, he confirms Cortés (p. 355), "La prisión de Cacama, rey de Tezcoco." (Id. p. 433), "a Chimapopoca sucedió el otra su hermano, dicho Izcona. Este Izcona señoró á Azcupizalco, Cuauhnaui, Chalco, Coatlíchan y Huexolincó, mas tuvo por acompañados en el gobierno á Nezahualcoyotín, señor de Tezcoco, y al señor de Tlacopan, y de aquí adelante mandaron y gobernaron estos tres señores cuantos reinos y pueblos obedecían y tributaban á los de Cúldá; bien que el principal y el mayor dellos era el rey de Méjico, el segundo el de Tezcoco, y el menor el de Tlacopan."

Bernal Díaz de Castillo. Historia verdadera de la Conquista de Nueva-España. (Vedia, Vol. II, Cap. C, p. 100.) "Como el Cacamatzin, señor de la ciudad de Tezcoco que después de Méjico era la mayor y mas principal ciudad que hay en la Nueva España." Also on the seizure of Cacamatzin, confirmatory of Cortés and of Gomara (pp. 101 and 102).

Gonzalo Fernandez de Oviedo y Valdes. Historia natural y general de Indias. Madrid, 1853 (Lib. XXXIII, cap. VIII, pp. 294 and 295). The entire chapter is devoted to the seizure of Cacamatzin, and is almost a verbal copy of the report made by Cortés, (Lib. XXXIII, cap. LII, p. 539). It contains a letter written to Oviedo, by the vice-roy of Mexico, Don Antonio de Mendoza, under date of 8 October, 1541, in which this functionary says: "Y lo de aquí no es tan poco que no podays hacer libro dello, é no será pequeño; porque aunque Montezuma é México es lo que entre nosotros ha sonado,

of social organization. The confederacy of tribes, as we have already shown, carried no influence whatever on the organization.

no era menor señor el Cacoonci de Mechucan, y otros que reconocian al uno ni al otro." We quote this passage merely as a general illustration.

Fray Bernardino de Sahagún. Historia general de las Cosas de Nueva-España, published by Sr. C. M. de Buitamante, in 1829 (Vol. II, lib. VIII, cap. III, p. 278). "El cuarto señor de Tezcoco se llamó Netzahualcoyotzin, y reinó setenta y un años, y en tiempo de esto se comenzaron las guerras, y tuvo el señorío de Tezcoco siendo señor del de México Itzcoatzin, y e-los entrambos hicieron guerra á los de Teapaneca, de Atzacatzalco, y á otros pueblos y provincias, y el fué fundador del señorío de Tezcoco in Acuilhoacan." (Id. Vol. III, lib. XII, cap. XLI, page 59, close of chapter.)

Fray Diego Durán. Historia de las Indias de Nueva España é Islas de Tierra Firme. Published by Sr. José Fernandez Ramirez at Mexico, in 1867, (Cap. XIV, p. 123). "El rey Itzcoatl, aunque mal dispuesto, holgó de la victoria y dió las gracias á todos los señores y principales, al qual, agraciándole la enfermedad, entendiendo de se acercarsele la muerte, mandó llamar al Señor de Tezcoco, Neçanalcayotl, pariente cercano suyo, y aconsejóle que no tuviese guerra con los Mexicanos, sus parientes y amigos, sino que antes se hiciese con ellos y fuese en su favor siempre: y dexó ordenado que desde en adelante fuese de Tezcoco el segundo rey de la comarca y el tercero el de Tacuba, á quien llamaban el rey de Tlaluacpan. . . ." (p. 124). " . . . y solo estos tres reynos mandaron y gobernaron la tierra, de hoy en adelante, siendo el de México sobre todos ellos, y casi como emperador y monarca del nuevo mundo." Nearly the whole of Cap. XV is devoted to the formation of the confederacy, but cannot be inserted here. The editor, Sr. J. F. Ramirez, appears to incline to the opinion, however, that there was a confederacy on equal terms, (note 2, p. 130). The same author also states repeatedly that the head-chiefs of Tezcoco and Tlacopan sacrificed (slaughtered) captives at the chief *teo-calli* of Mexico, on very solemn occasions, together with the head-chief of Mexico, thus showing equal rights. (Cap. XXIII, p. 197 and others.) But his plainest statement is found (Cap. XLIII, p. 317), and reads as follows: "Algunos han querido decir quel reyno de Tezcoco era libre de todo reconocimiento y parias al monarca, y que en nada le era sujeto, lo qual alio al contrario en esta ystoria Mexicana; porque aunque á la verdad no tributaban á Mexico mantas ni jolas ni plumas ni cosas de comida, como otras provincias tributaban, hallo empero á los Mexicanos metidos en las tierras tezcocanas donde sembraban y cogian, y algunos dellos hechos terrazgueros de los señores de México; y alio que en ofreciéndose estas fiestas y solenidades, daban tributo deschaus para ella, de lo qual ninguno estava esento ni reservado. Tambien alio que ofreciéndose dar guerra á alguna ciudad y provincia, al primero que llamaban y aculian para que aperciblese sus gentes, era al rey de Tezcoco, y como abemos, notado en esta ystoria, le hacian venir á Mexico todas las veces que se ofrecia ocasion, loqual no era poca sujecion, dado que tuviese sus préeminencias y libertades de rey y señor de aquella provincia de Acuilhoacan; . . ."

Fernando de Alvarado Tezozomoc. Crónica Mexicana. (9th Vol. of Lord Kingsborough's "Antiquities of Mexico.") This author agrees so closely with Durán in most instances, that we can dispense with full quotations. See Cap. XIX and XX, on the pretended conquest of Tezcoco by the Mexicans. Tezozomoc is very positive on the question of joint sacrifice (Cap. LXIX, p. 117). A singular remark is, however, found (Cap. XCVII, p. 172). After the Huexotzincas had sent delegates to Mexico to sue for peace, the Mexican council was called together: "dijo zihuacatl resolutio: Señor, como será esto, si no lo saben vuestros consejeros de guerra los reyes de Acuilhoacan-Nezahualpilli, y el de Teapanecas Tlattecatzin? hagase entero cabildo y acuerdo: fue acordado así." This important incident shows that not even the Mexicans had the right to treat alone with a power hostile to the three tribes, consequently that the other two were their *confederates*, and not their *feudal vassals*. Fray Durán confirms the incident in chapter LX, p. 473, of his work, preceedingly quoted.

Joseph de Acosta, Historia natural y moral de las Indias, Madrid, 1608, derives his information from the same source as the two preceding, namely: the Codex Bami

It was only a partnership, formed for the purpose of carrying on the business of warfare, and that intended not for the extension of

rez, now in process of publication at Mexico. Acosta mentions and describes (Lib. VII, Cap. XV, p. 400) the traditional war between the Mexicans and Tezcucans concluding: "Con esto quedó el Rey de Mexico por supremo Rey de Tezcuco, y no quitandoles su Rey, sino haziendole del supremo Censojo suyo." (Cap. XVI, p. 400.) Both chiefs, of Tezcuco and of Tlacopan, are mentioned by him as "electors" of the Mexican head-chiefs.

Sebastian Ramirez de Fuenleal, Bishop of San Domingo and President of the Royal Audiencia at Mexico. "*Lettre . . . à sa majesté Charles V.*" translated by Mr. Ternaux-Compans in his "*Premier Recueil de Pièces relatives à la Nouvelle-Espagne*," and bearing date 3 Nov., 1532 (p. 254). "Les souverains de Tezcoco, de Tacuba, qui étaient très puissants dans cette contrée, agissaient de même que Mutizuma. Ils partageaient entre eux et ce souverain le fruit de leurs conquêtes; cependant les souverains de Mexico étaient les plus puissants, et ils eurent toujours une plus grande différence." The same words about are repeated in the "*Second Recueil*" printed 1840, (the first "*Recueil*" appeared in 1838), on p. 222. The Report is therein stated to be by the President and the Audiencia.

"*Lettre des Chapelains Frère Turibio et Frère Diego D'Olarie à Don Luis de Velasco* etc.," date: St. François de Cholula, 27 Août, 1551. (Ternaux, "*Recueil*," I, p. 403), "Toutes les autres obéissaient à Montezuma, au souverain de Tezcuco, et à celui de Tlacopa. Ces trois princes étaient étroitement confédérés; ils partageaient entre eux tous les pays qu'ils subjuguèrent. Montezuma exerçait la toute-puissance dans les affaires relatives à la guerre et au gouvernement de la confédération."

Fray Geronimo de Mendieta. "*Historia eclesiastica Indiana*," published by Ixtabalceta in 1870. After having mentioned (Lib. II, cap. XXVI, p. 129) that the chiefs of Mexico and Tezcuco sent challenges to foreign tribes to recognize "the chief of Mexico" as their superior, and to give him tribute, he says (Cap. XXVIII, p. 134), "Es de saber que los señores de México, Tezcuco y Tacuba, como reyes y señores supremos de esta tierra. . . ." (Cap. XXXVII, p. 156.) "Los señores de las provincias o pueblos que inmediatamente eran sujetos à Mexico, iban luego allí à ser confirmados en sus señorías, despues que los principales de sus provincias los habian elegido, y con algunos. . . . En los pueblos y provincias que inmediatamente eran sujetos à Tezcuco y à Tacuba tenian recurso por la confirmacion à sus señores; que en esto y otras cosas estos dos señores no reconocian superior." Italics are my own.

Antón de Herrera. "*Historia general de los hechos de los Castellanos en las Islas y la Tierra-Firme del mar Oceano*." 1726. Madrid. (Dec. II, lib. VII, cap. XII, p. 190). He almost copies Gomara, and in regard to the seizure of Cacamatzin he not only confirms Cortés, Gomara, and Bernal Diez, but is much more detailed and positive yet. (Dec. II, lib. IX, cap. II, pp. 217, 218.) Finally he asserts: (Dec. III, lib. IV, cap. XV, p. 133), "Con Mexico estaban confederados los Señores de Tezcuco, i Tlacopan, que agora Hanan Tacuba, i partian lo que ganaban, i obedecian al Señor de Mexico, en lo tocante à la guerra, i tenian algunos Pueblos comunes en sucesion, así de los Señorios, como de los Maiorazgos, i haciendas."

We now turn to an author who plainly takes an opposite view of the question, claiming, in place of a Mexican "Empire," the supremacy for the Tezcucans, or an ancient "Empire" of the Chichimecas. The latter claim has already been discussed in "*Tenure of Lands*" (p. 394, note 10). This assumption,—which strongly combats the view that there was anything at all like an Empire, while it implies the existence of a mere confederacy,—is set forth by the following well known Tezcucan native author.

Fernando de Alva Ixtlilxochitl. "*Histoire des Chichimeques ou des anciens Rois de Tezcuco*." This is the french translation of the original "*Historia de los Chichimecos*, etc., etc.," contained in Lord Kingsborough's 9th volume. Since abstracts might prove too lengthy, I merely refer to (Cap. XXXII) on the formation of the confederacy as containing some very plain and remarkable passages (pp. 218, 219, and 220), among

territorial ownership, but only for an increase of the means of subsistence.⁶

which is one: "cestrois dynasties gouvernaient la Nouvelle-Espagne jusqu'à l'arrivée des chrétiens. Cependant, quoiqu'elles fussent égales en rang, en puissance et en revenu, il y avait de certains tributs dont le roi de Tlacoopan ne recevait qu'un cinquième, tandis que ceux de Mexico et de Tezcucuo en recevaient chacun deux." See also (Cap. XXXIV, cap. XXXVI, pp. 245 and 246; cap. XXXVIII, pp. 269 and 273; 3d vol., Cap. LXXI, pp. 109 and 110), and others. Nevertheless, Ixtlilxochitl reproaches bitterly Montezuma with having usurped the leading power which belonged to the Tezcucans (according to him), and having taken the direction of the confederacy into his hands. (Cap. LXXV, p. 128, to XXVI, p. 182, etc.). These charges are violently repeated in his other and more extensive work: "*Relaciones historicas*." Also in Vol. IX of Lord Kingsborough. As a specimen, I refer to the 'Venida de los Españoles' translated also by Mr. Ternaux under the title of "*Cruautés horribles des conquérants du Mexique*." In regard to the war between Tezcucuo and Mexico, in which he, of course, attributes the fullest victory to the former see also "*Undécima Relacion*" (Kingsborough, IX, pp. 407 and 408). Ixtlilxochitl is seconded and followed by his illustrious contemporary, *Fray Juan de Torquemada*. "*Los veintetres Libros Rituales i monarchia Indiana*, etc., etc.' Edition of 1723. This distinguished ecclesiastic is such a consistent advocate of feudalism, that he even assigns the division of Tenochtitlan into four quarters to an "edict" of the "Chichimecan Emperor" Techotlaltzin (Lib. II, cap. VIII, pp. 88 and 89), or to an order of Mexican "Lords" (Lib. III, cap. XXIV, p. 295). Still he is very plain about Tezcucuo being equal and not subject to Mexico. Compare for instance (Lib. III, cap. XXVII, p. 304), "nunca perdió su antigua estimacion, y siempre tuvo Rei, y Señor legitimo, que la regia, y gobernaba, y era igual con el de Mexico," (Lib. II, cap. XXXIX, p. 144), about the confederacy; (Cap. XI, p. 146). About the pretended war between the two tribes (Cap. XLII, p. 149. "Y no solo no es verdad; pero es directamente contra ella." On the supposed intrigues of Montezuma against the Tezcucans (Lib. II, caps. LXXXIII, LXXXIV, etc., etc.), until the first passage of Cap. LXXXVII, (p. 337), "muerto el Rei Negahualpilli de Tezcucuo, y entrando en su lugar su Hijo Cacama . . . corrió la confederacion de los Reies, como hasta entonces lo avian acostumbrado . . ." also (Lib. XI, cap. XXVI, p. 353), " . . . no deja de ser su igual, y semejante el de Tezcucuo . . ." (Cap. XXVII, p. 356; cap. XXVIII, p. 361.) Copy of Mendieta. About warfare of the Confederates (Lib. XII, cap. VI, p. 363; Lib. XIV, cap. I, p. 533; Cap. II, p. 537). Division of Spoils and of Tributes Idem. (cap. VIII, pp. 546, 547 and 548), "porque cierto es así, que el Rei de Mexico no era maior en Autoridad, que el de Tezcucuo . . ." From these, but especially from Torquemada's history of the conquest, which occupies the entire fourth Book (Vol. I), enough can be gathered to show that this enormous but important authority admits no Mexican Empire, but only a confederacy of Mexicans, Tezcucans, and Tlacoopans.

Fray Agustín de Vetancurt, "*Teatro Mexicano*," (Edition of 1870), admits the supremacy of the Mexicans (Parte IIa, Trat. I°, cap. XIV, p. 291), "y remataron la fiesta que dando Iscchuatl por rey supremo del imperio tepaneca, por ser primero que nezahuacoyotl, y este por rey de los aculhuas, y al de Tacuba le hicieron rey de la parte de masahuacan, etc. . . .". But the confederacy "liga," of the three chiefs is acknowledged everywhere. (Also Trat. II°, cap. III, p. 383), "cuando los Mexicanos, los tezcucanos ó de Tlacoopan (que eran los reyes que estaban confederados para las guerras, etc. . . ."

To this lengthy collection of quotations many others might be added, from the same period as well as of a later date. They appear to justify the proposition advanced, namely: none of the confederates exercised any power over the others, beyond that of *exclusively military* leadership, which had been awarded to the Mexicans proper.

The conquerors never interfered with the government, organization, and mode of life of tribes whom they had overpowered. No attempt, either direct or implied, was made to assimilate or incorporate them.

My friend *Dr. G. Brühl*, author of the highly interesting and conscientious work

Our investigations are therefore confined to the limits of the single tribe, and we have selected for that purpose the Mexicans

"*Die Culturvolker des alten Amerika*" (Cincinnati, 1876, '77, '78), has, in regard to the statements made in "*Art of War*" (p. 100, note 17; p. 133, note 152), and in "*Tenure of Lands*" (pp. 412 and 413, also note 56; pp. 417 and 418, also note 60), called my attention to a passage from Sahagun, "*Historia general*" (Lib. VIII, cap. XXIV, p. 313), "Habiendo pacificado la provincia, luego los señores del campo repartian tributos á los que habian sido conquistados, para que cada un año los diesen al señor que les habia conquistado, y el tributo era de lo que en ella se criaba y se hacia, y luego elegian gobernadores y oficiales que presidiesen en aquella provincia, no de los naturales de ella, sino de los que la habian conquistado." The author himself, however, gives the explanation of what he intends to designate by such "governors and officials who should preside in said province." In his 12th Book, (Cap. II, p. 5, Vol. III), he says: "La primera vez que parecieron navios en la costa de esta Nueva-España, los capitanes de Moctheuzoma que se llamaban Calpixques que estaban cerca de la costa luego fueron á ver que era aquello que vino, que nunca habian visto navios, uno de los cuales fue el calpixque de Cuextecatli que se llamaba Pinotli: llevaba consigo otros calpixques uno que se llamaba Yaotzin, que residia en el pueblo de Mictlanquauhltia, y otro que se llamaba Teozinzocatli, que residia en el pueblo de Teocinlocan, y otro que se llamaba Cuitaltpoc, este no era calpixque sino criado de uno de estos calpixques, y principal-ejo que se llamaba Tentilli." In this Sahagun about agrees with *Tezozomoc* (*Crónica*, Cap. CVI, CVII, CVIII, CIX), inasmuch as the latter also states the officers to have been calpixques, th. is. "Stewards" or *gatherers of tribute*. Compare *Alonso de Molina*, "*Vocabulario*," (Parte IIa, p. 12.)

The names of these Indians who received Cortés are found nearly alike in all the authors, but we are struck by the fact that many of them call the natives "governors" of Montezuma. I quote *Bernal Días de Castillo* (Cap. XXXVIII, pp. 32 and 33, Vedia, Vol. II) *Gomara* (pp. 312, 313, 314, etc., Vedia I). *Ixtlilxochitl* ("*Histoire des Chichimèques*," Cap. LXXIX, p. 100). "*Cruautés horribles*," (p. 3.) *Herrera* (Dec. II, lib. V, cap. IV, p. 116; Cap. V, p. 117). *Torquemada* (Lib. IV, cap. XVI, p. 387; Cap. XVII, p. 386, etc.). *Vetancourt* (Vol. II, cap. IV, p. 43). *Fray Joseph Joaquín Granados y Galvez*, ("*Tardes Americanas*" Mexico, 1778, 9th evening, p. 234). *Abbate F. X. Clavigero* ("*Geschichte von Mexico*," Leipzig, 1790, a German translation of the Italian original which appeared at Cesena in 1780. Vol. II, Lib. VIII, cap. V, p. 16). These *governors* therefore were but "calpixques," in other words *collectors of tribute*. This is already stated by *Oviedo y Valdés* (Vol. III, Lib. XXXIII, cap. I, p. 259), speaking of Cempoal, "porque los indios é ministros, que alli estaban para mandarlos, eran oficiales é mayordomos de la cibdad de México." The "*Real Ejecutoria de S. M., Sobre Tierras y Reservas de Pechos y Paga perteneciente á los Cuciques de Azapasco, de la Jurisdiccion de Otumba*," (Col. de Doc's, Vol. II, Icazbalceta, p. 5), calls all the Indians in question "enviados por el gran Montezuma."

This explains the evident contradictions of Sahagun.

It is a singular fact, but one amply proven by the records of the conquest, that nowhere did the Spaniards, on their whole march from the coast to Mexico, meet with Mexican *administrators* or *rulers* of subjected tribes. Quotations are useless, we only refer to the remarkable description furnished by Bernal Días of the events at Quauhiztlan (Vedia II, Cap. XLVI, pp. 40 and 41), which culminated in the violence done to the "recaudadores de Montezuma." This scene, which is highly characteristic, has been beautifully "remodeled," through a few omissions, by our own great *W. H. Prescott* ("*History of the conquest of Mexico*," 1869, Book II, chap. VII, p. 349). There is, finally, abundant proof of the fact that neither the Mexicans, nor any of their confederates, ever attempted to change or subvert the organization and mode of government of any of the tribes whom they overthrew. I refer to *Oviedo y Valdés* (Lib. XXXIII, cap. XLVI, p. 502). *Torquemada* (Lib. XIV, cap. VIII, p. 847). *Ixtlilxochitl* (*Histoire des Chichimèques*, (Cap. XXXVIII, p. 275). *Andrés de Tápia* ("*Relacion sobre la Conquista*

proper, who dwelt, as elsewhere established by us, on the partly artificial islands in the lagoon of the Mexican valley.⁷ Besides the prominence acquired by them in the annals of history, it may safely be assumed that, in a general manner, their Institutions are typical of those of other sedentary tribes.⁸

Tribal society, based according to Lewis H. Morgan upon *KIN*, and not *political* society which rests, according to the same author, upon *TERRITORY* and *PROPERTY*, must therefore be looked for among the ancient Mexicans. It remains for us to establish its degree of development, its details, and the manner of its working.

In order to comprehend the true nature of these questions, we should secure as much information as possible of the *past* of the tribe under consideration. Institutions are never wilfully or accidentally created, but evolved; in other words, they are the result of growth in knowledge and experience.⁹ The great difference existing between tribal society and political is explained as a dif-

de México," Col. de Doc., Vol. II, Icazbalceta, p. 591, and especially p. 592), "México tenía en su tiempo en el hacer guerra esta orden; que yendo á la guerra, al que se daba de paz no tenía sobre él tributo cierto, sino que tantas veces en el año lo llevaban presente á su discrecion del que lo llevaba; pero si era poco mostrábales mal rostro, y si mucho agradecíasele. Y en estos no ponía mayordomo ni recaudador ni cosa; el señor se era señor. Los que tomaba de guerra decían *tequitin tlacotl*, que quiere decir, tributan como esclavos. En estos ponía mayordomos y recogedores y recaudadores; y aunque los Señores mandaban su gente, eran debajo de la mano destos de México" *Motolinia* (Trat. III, cap. VII. p. 185), *Granados y Gálvez*. (5th night, p. 168), a singular picture of purest feudality, for which Gomara may be responsible in part. *Ramírez de Fuenleal* (Letter of 4th Nov., 1532, 1st; "Recueil," (pp. 245, 246, and 247). *Zurita* "Rapport," (p. 16), to be compared with Mendieta and Torquemada.

Consequently there was no tendency towards unification or nationalization in all the successful and extensive raids which the Nahuatlaca of the valley of Mexico carried on for a full century. No organic body, larger than the tribe, resulted from these sanguinary forays; because the confederacy itself was not the end, but the beginning of these undertakings. This justifies the view which I shall hereafter advocate in regard to the nature of that confederacy namely: as a mere partnership to carry on the business of warfare the latter in turn being part of the mode of subsistence.

⁷ "Based upon territory and property" according to L. H. Morgan, in contra-distinction to tribal-society, based upon "Kin." ("Ancient Society," chapter II, page 62).

⁸ "Art of War," p. 95.

⁹ "Art of War," p. 150. "Tenure of Lands," pp. 421, 422.

¹⁰ "Istillochilli (*Histoire des Chichimèques*," Cap. XXXVI, p. 245). "Ainsi, tout ce qui se dit de Tezcuco doit s'entendre aussi des deux autres, . . ." Gomara (p. 440, Vedia, I). "To speak of the Mexicans, signifies as much as speaking of all New Spain." The title of the section is: "Costumbres de los hombres," and the original text reads: "Hablando de mejicanos, es hablar en general de toda la Nueva-España." Although Zurita (p. 5) insists upon the variety of customs among the aborigines,—changing from settlement to settlement, from tribe to tribe,—his own report furnishes the proof of the contrary, and it is evident from the text that he alludes principally to the diversity in languages and dialects.

¹¹ Morgan ("Ancient Society," Chap. I, p. 6).

ferent state of progress. But Institutions have grown out of the relations between the sexes, and the increase of the human species and its propagation. Had political society existed in Mexico, we should be entitled to find there a plain and definite conception of the family.¹⁰ Whether such is the case a glance at the system of consanguinity of the ancient Mexicans, as far as it may be possible, will tell us.

Among American aborigines of low culture, in fact over the widest area once held by the "Indian" race, "mother-right" ruled supreme. The tangible fact, coarsely expressed, that a child was always sure of his *mother*, whereas it might not be equally certain of his *father*,¹¹ created in course of time and with increased numbers a tendency to aggregate into clusters whose basis was certainty of descent in common. These clusters were the *kins*, significantly termed "lineages" by Spanish authors. Such as traced back their descent to a common mother therefore composed one of these, regardless of their male procreators. The family—consisting of a group which includes children as descendants of *both* parents—was not yet recognized, and the kin took its place for all purposes of public life. It formed the *unit of social organization*. With the growth of knowledge and experience however, and a corresponding increase of wants, the importance of man rose correspondingly. "Mother-right" began to yield; female descent to change to "descent in the male line." Nevertheless the kin remained the unit of social agglomeration, with the only difference that it was reckoned through males instead of by females. It required the final overthrow of the kin as a public Institution to bring about the present shape of that intimate group, the family, among the most highly advanced nations.¹²

The two extremes of growth of the family, as characterized by the inception of the kin, and by the family after the obliteration

¹⁰ (*Ancient Society*, Chap. II, p. 78.) For the so-called "Descriptive System of Relationship," compare *L. H. Morgan* ("Systems of Consanguinity and Affinity of the Human Family," Chap. II, pp. 16, 12, 13).

¹¹ This assertion is found in various authors. I shall quote but one: *Gregorio García*, ("Origen de los Indios de el Nuevo Mundo e Indias Occidentales," second edition, 1729, Madrid, Lib. IV, Cap. XXIII, p. 247).

¹² Although it is entirely out of the line of these researches to enter upon a discussion of Primitive Marriage, I was compelled to refer to the question of kin in such a manner as to explain at least the importance of that group in the history of society. For anything else the works of Mr. Morgan, Sir Henry S. Maine, John F. Mc Lennan, and some publications of Dr. Ad. Bastian, should be consulted, besides a great number of others too numerous to mention here.

of the former, are distinguished by the terminology of relationship. In the case of the former, relatives are at once classified; in the latter instance, they are merely described. Now, our investigations of the customs of Inheritance among the ancient Mexicans have led us to the conclusion that they had already achieved progress to *descent in the male line*.¹³ Actual family existed among them in its incipient form at least.

But we meet here with a singular feature in designating relationships. *Ascending* from the "Ego," as point of departure, we find the following terms in the Mexican (Nahuatl) language.

Father: "tatli" — "teta."¹⁴

Brother of father or mother (paternal or maternal uncle): "tlatli" — "tetla."¹⁵

Grandfather: "tecul." Granduncle: "tecol."¹⁶

Great-grandfather: "achtontli."¹⁷

¹³ "Tenure of Lands" (p. 429, note 108).

¹⁴ Molina ("Vocabulario," Part Ia, p. 91; IIa, pp. 106, 91). Besides the plural "tetatzin," the names, "yzacacauhtli," "teizacacauh," are also mentioned (I, p. 91). The former is defined (II, p. 46) as "natural father." It derives from "Izcalla" or "ninoizcalla" — "to give life" and "acauhtli." The latter evidently is an abbreviation or corruption from "nitla teachcauhala" — "to be preferred in what is distributed, or in a distribution" (II, p. 2), which in turn is at the root of "teachcauhtin" — "elder brother" (II, p. 91). It is superfluous here to quote authorities in support of the fact that "ach" is frequently corrupted to "ac," or the inverse. In Cakchiquel: "Tata." See *Brasseur de Bourbourg* ("Grammaire de la Langue Quiché, etc." pp. 217, 218). The root "Ta" is also found in other Indian idioms. See: *Gatschet* (*Zwölf Sprachen aus dem Südwesten Nordamerikas*, p. 137).

¹⁵ Molina (I, p. 180; II, p. 140.) All the difference consists in the insertion of the letter "l" after the "t." "Tetla" is but an abbreviation of "Te-tutli." from "Tehuatl" thou, p. 94, and father, which is also shown in the alteration of "tatli" to "tayta" or "tata," the name given by children to their father (p. 91, II). Corresponds to the quiché "tat" (*Brasseur de Bourbourg*, "Grammaire, etc." p. 218), and to the Muisca "Ze paba" ("Pába" father). *Morgan* after *Uricoechea* ("Systems of consonquintly," p. 265).

¹⁶ Molina (II, p. 94; II, p. 93). Here again the change from "n" to "o" appears, which is so frequent among older authors. For inst., *Tescoco* and *Tescuco*, *Ometochtli* and *Ometuchtli*, *Tlacopan* and *Tlacahuapan*, *Olli* and *Ulli*, etc. etc. Such changes are very excusable, they proceed from the Indian pronunciation of vowels. On this subject compare, although it concerns properly but the Quichua Idiom of Peru, the excellent essay of Señor Don Gavino Pacheco y Zegarra of Puno, entitled "*Alphabet phonétique de la langue Quichua*," published in the 2nd volume of the "*Compte Rendu du Congrès International des Américanistes*," at Nancy, in 1875. He says (p. 303) "D'autre part, le kehua différant essentiellement des langues romanes, surtout en ce qui concerne les sons élémentaires, il est impossible de donner une idée exacte de ces sons au moyen du seul alphabet latin. . . ." In regard to "O" and "U," see pp. 306, 307, 308. etc. What the author says of the Quichua applies exactly to the Nahuatl also. See Molina ("Prologo y Avisos," 3d page "Aviso septimo").

¹⁷ Molina (I, p. 117; II, p. 2). Literally, "little preferred one." Compare *Sahagun* (Lib. X, cap. I, p. 5, 2d Vol).

Mother: "nantli" — "tenantzin" — "teciztli." ¹⁸

Aunt: "auitl" — "teani." ¹⁹

Grandmother as well as grand-aunt: "citli." ²⁰

Great-grandmother "piptontli." ²¹

Descending from the "Ego."

Son: "tepiltzin," "tetelpuch." But the women (mother, sisters, etc.), call him "noconeuh." ²²

¹⁸ Molina (I, p. 80; II, pp. 63, 92, 96). "Citlil" is probably the same as "Citli,"—hare, or grandaunt. The fact that the same name should be given to a near female relative or even to the mother, and to a fleet, timid, quadruped, is very singular. It may be that the timidity of the animal has given occasion to bestow the name, or, since hare's hair was frequently woven into fine mantles, together with feathers, that this also may have given rise to it. The latter is first mentioned by *Peter Martyr, of Anghiera*, "*De nouo Orbe*," or the "*Historie of the West Indies, etc., etc.*" London, 1613. An English translation by Michael Lok and Richard Eden, of the famous "*Decades*," also entitled "*De Rebus Oceanicis*," (Dec. V, cap. X, p. 229), he mentions having seen among the objects brought to the court of Spain by Juan de Ribera, garments; "they compact of Conies haire, and they set these feathers in such order between the Cony haire, and intermingle them between the thriddles of the cotton, and weave them in such difficulty, that we do not well understande how they might do it." Sahagun (Lib. XI, Cap. I, p. 157) mentions another animal to which the name "ciotlamacazqui" is given, which he translated "little old woman," basing upon its other designation of "tlamaton."

The reverend father is, however, in error. The first name signifies literally, "woman medicine-man," or "female doctor" (Indian notion of course), and the second "little medicine-man," from "ciuatl" woman, Molina, II, p. 22, "tlama"—medicine-man, (II, 125). This animal seems to be the Raccoon, as the following quotations prove: *Joannis Eusebii Nuremberg*, ("*Historia natura marina peregrine*," Antwerp, 1635 Lib. IX, Cap. XLII, p. 175). "Antra canitates montium atque collum Tzozocolci hospitatur animal peregrinum, quod cuncta manibus praetentat. Mapach ab Indis dicitur, sed non firmo nomine; alij illamaton seu vetulam appellant, alij maxtlo seu gossypium cingulum, alij ciotlamacazque seu sacerdotissam." *Oviedo y Valdés* (Lib. XII, Cap. XXXIX, p. 423), he calls "Coquematle," an animal which is probably the Coati, makes no mention of the "mapach," but *Clavigero* (Liv. I, Cap. X, p. 76) treats of this animal fully.

The naming of a female relationship, "Citli" appears the more strange, as this name is given, in the Mexican mythological tales, to a god who tried to compel the sun to move, and lost his life in the attempt. This story is due to *Andrés de Olmos*, neither Sahagun nor Motolinia mention the occurrence in this manner. Compare Sahagun (Lib. VII, Cap. II, p. 245, etc., etc.); *Mendieta* (Lib. II, Cap. I, pp. 77, 78) and *Torquemada* (Lib. VI, Cap. XLI, p. 76). Both refer it to his authority. We shall refer to it in our essay on "Creed and Belief."

¹⁹ Molina (I, 113; II, 9, 91).

²⁰ Molina (I, 113; II, 23). See note 18.

²¹ Molina (I, p. 117; II, 82). There is also, "nlipipinia"—"pararse flaco de vejez," and "Pipinqui ynacayo"—"viejo flaco y arrugado." The affix "tontli" is a diminutive.

²² Molina (I, p. 71). A singular etymology is shown here: The man says, { "Thy } boy" or { "Thy } youth. ("Te-piltzin"—"Te-telpuch" } from "Tehuatl" { "Their" } or "Te" "thou" } and "Piltzintli," child, male or female, (II, p. 82), and "Telpochtli," youth, (p. 96). The woman, however, calls: "my child" (or boy, since the same name is for both

Daughter: "teichpuch," "tepiltzin." Women call her "tecon-
euh."²³

Grandson or granddaughter, male or female cousin, are called
alike, to wit: "yxiuhtli"—"teixiuh."²⁴

Nephew and niece are called: "machtli"—"temach" by the
males. The females however address them: "nopilo."²⁵

This brings to light some very curious facts.

In the first place, the following grades of consanguinity are
called by the same names respectively: grandfather and grand-
uncle, grandmother and grand-aunt, father and uncle, grand-
daughter, grandson and cousin, nephew and niece.

sexes), from "conetl"—"niño o niña" (II, p. 24), and the possessive pronoun "no"
according to H. H. Bancroft, "*Native Races of the Pacific States*," (Vol. III, Cap. IX,
p. 734), or "noca"—"of me" (Molina, II, 73). These are, however, not the only
appellations. We have besides:

Children of both sexes and grandchildren, collectively: "tepilhuan, teixhuan"
(I, p. 71). The first one is easily decomposed into "te" theirs, "piltzuitli" child,
and a possessive affix "huan" Bancroft ("*Native Races*," Vol. III, Cap. IX, p.
732).

Oldest son or daughter "teyacapan" "yacapanitl" (p. 71, I). From "necyacatin,"
to be the first or leader (II, p. 22), "yacatl"—nose probably on account of its
protuberance, (II, p. 22).

Second son or daughter, "tlacoyena" "tetlamamallo" (p. 71, I). The first one
might possibly derive from "centlacol"—one-half (I, p. 83), since Molina adds
(II, p. 118), "el segundo hijo ó hija, o de tres o quatro engendrados ó nacidos." The
etymology of the other, if correct, would be singular. It is either from "tetla" uncle,
and "tetlan nina mamali" "hender, meterse entre mucha gente" (II, p. 52), or from
"te" their and, "Tlamama" carrier of a load (II, p. 125). In both cases it indicates
an inferior position.

Youngest son or daughter "xocoyotl" "texocoyouh" (I, p. 71). Definitions too
doubtful. Finally, there are the surnames, or caresses, like, "cuzcatlquetzalli"—
collar of changing green hues,—"tecuzcuan"—"tequetzalhuan" (I, p. 71), which all
have the same significance, in a general way, of "precious gem" or "Jewel." These
metaphorical names are found profusely in *Tezozomoc* ("*Crónica Mexicana*.")

The fact, above noticed, that while men, if strangers, address boys, "their boy,"
while women call them "my boy," is perhaps significant. It might be a lingering
remnant of "mother-right."

²³ Molina (I, 71), derives from "Ichpocatl" (ghl, II, p. 32.) So far teichpeuh,—the
other two are already explained.

²⁴ Molina (I, pp. 88, 98). But there is also, "Nieta ó nieta dos veces," "yentontli"
"teicuton." Now, according to the same authority (II, p. 34), the older brother or
sister calls the younger "n. icuh" ("n" as abbreviation to "no"). Consequently, the
signification would be, "little younger brother or sister."

²⁵ Molina (I, p. 109; II, 51, 73). In this case the woman again calls them "my child"
("no" my, and "piltzintli" child). The custom of giving different names to relation-
ships, by women and by men, is found in Peru among the Quichua and Inca.
Compare Garcilasso de la Vega, "*Histoire des Incas Rois du Pérou*," (French trans-
lation from the original Spanish, by J. Baudouin, Amsterdam, 1704. Lib. IV, Cap. XI,
Vol. I, pp. 359, 360). J. J. von Tschudi ("*Peru*" *Reisekizzen*, St. Gall, 1846, an excellent
book. Vol. II, Cap. X, p. 380). A similar custom also appears in New Granada among
the Muysca. L. H. Morgan ("*Systems of Consanguinity, etc.*" p. 265, after Uribeacches).

Secondly, the relationships in the descending scale are more closely described than those in the ascending scale.

Thirdly, in some instances women give different names from those given by men.

It results from it, that the classificatory system still, to a great extent, predominated in the ancient Mexican nomenclature for relationship, while the more modern descriptive system appears in a minority of cases only. This leads to the inference that the Mexican family itself was yet but imperfectly constituted. It was not yet so established as to form a definite group and hence cannot be expected to exercise any influence in the matter of public social life. We are, therefore, again justified in looking to the *kin* as the unit of social organization, within the limits of that widest aggregate, the tribe.²⁶

Traditionary tales about the earliest settlement of man in Mexico as well as in Central America, distinctly ascribe it to "lineages" or relationships. The tribe is merely implied, and appears in a definite form only *after* this settlement has already occurred.

The "Popol-Vuh," or gathering of the cosmological and traditionary records of the QQuiché tribe of Guatemala, after enumerating the four wives of the four first men created, even says: "These [their spouses], engendered mankind, the large and small tribes: and they were the stock of us, of the QQuiché tribe." This indicates, perhaps, descent in the female line at a very early date.²⁷

²⁶ Dr. Adolphus Bastian, "Ueber die Eheverhältnisse." ("Zeitschrift für Ethnologie," Berlin. Vol. V, 1874) presupposes a family, definite and distinct: "Aus der Ehe, als erster Kreisung der Gesellschaft geht die Familie hervor, in ausgedehnter Peripherie als gens (unter Erweiterung durch die Agnaten) aus ursprünglichen Patriclern; wo der Clan unter Aufnahme fiktiver Verwandten und zugehörigen seinen abschluss unter den Patriarchen bewahrt." Such views offer a sufficient explanation, when applied indiscriminately to the inhabitants of *all* the continents, why the organization of some aborigines of this continent is still regarded as monarchical. The nature and functions of the Indian kin are completely misunderstood and proportionately misrepresented. (See also *Id.*, p. 396.)

²⁷ "Popol-Vuh" (Translated from the original QQuiché by the Abbé Charles Etienne Brasseur de Bourbourg. Paris, 1861, Part III, cap. III, p. 205). "E pogol vinak, chutl amag, nima amag; are cut u xe kech. ri oh Queche-vinak; tzatz cut x-uxic ri Ahqixb Ahqahb; mana xa E cahib chic x-uxic. xere cahib ri qui chuch oh quiche vinak." Mr. Brasseur translates "vinak" alternately as men, tribes, and nations. According to his own vocabulary, however, it means but "man" or "the increase" (See "Grammaire QQuiché," p. 233). In his translation of the "*Rabinal-Achi*" ("Grammaire" First Scene, pp. 27 and 35, and other places), "vinak" is also rendered as chief. But the true QQuiché word for tribe is "amag" ("Grammaire," p. 167). This alters the sense to the extent that instead of "QQuiché tribe" it should read "men of QQuiché" or rather "QQuiché

The first settlement of Chiapas is ascribed, in the tale of Votan, to seven families.²⁸ But there is still another and more remarkable tradition connected with it. Like the Aborigines of Mexico of *Nahuatl* stock, the *Tarasca* of Michhuacan, the *Maya* of Yucatan, and the *QQuiché*, *Cakchiquel* and *Zutuhil* of Guatemala, the Aborigines of Chiapas had a month composed of twenty days, bearing each a particular name. It is positively asserted by very old authority, that these twenty days were named after as many chiefs of an equal number of lineages or kins, the latter being the earliest settlers of the country. Furthermore, among these twenty names, four are everywhere prominently distinguished.

men." The last words "xere cahib ri qui chuch oh Quiché vinak," are literally: "though four these (which, who) certainly (surely) mother us (we) QQuiché men." The note by the celebrated Abbé (p. 207, note 3), in which he states that "mother" is often applied to chief, finds a parallel in many passages of *Tetzomoc* when the tribe is also addressed as father and mother. Also *Durán* (Cap. XV, p. 127).

The creation of these four men and four women immediately precedes, in the *Popol-Vuh*, the tale of the first sacrifice and the distribution of the idols, and is distinctly stated as having occurred during the time of obscurity, the morning star being their only guide and most brilliant luminary ("Popol-Vuh," pp. 209, 211, and 213). Now an analogous tale is told by *Sahagún* (Lib. VII, cap. II, p. 248, etc.), about the first appearance of both sun and moon. The Gods, disappointed about the place where the two celestial bodies would rise, and four of them, together with four women, looked to the east for their coming. The QQuiché tradition (p. 207), places the coming of these first people also in the East. It appears to be, therefore, a tradition originally common to the "Nahuatl" and to the "QQuiché," and its bearing upon the question at issue becomes still more prominent.

²⁸ The two leading sources on Chiapas namely: *Núñez de la Vega* ("Constitution diocesana del Estado de Chiapas, Roma, 1702), and *Fray Antonio de Remesal* ("Historia de la Provincia de Chyapa y Guatemala de la Orden de Santo Domingo," 1619), not being at my command now,—I can but refer the student to them, and to the following works besides: *Lorenzo Boturini Benaducci* ("Idea de una Nueva Historia General de la America Septentrional," Madrid, 1776, § XVI, p. 116, copying *Núñez de la Vega*, 84, § XXX), *Mariano Veytia y Echeverría* ("Historia antigua de México," 1836, by Ortega, Vol. I, cap. II, p. 15). *Clavigero* (Lib. II, cap. XII, pp. 164 and 165). *Paul Felix Cabrera* ("Teatro crítico Americano," german translation by Lient. General J. H. von Minutoli, incorporated in the latter's book. "Beschreibung einer alten Stadt, die in Guatimala (Neuspanien) unfern Palenque entdeckt worden ist," p. 30. etc., after Vega also). *Brasseur de Bourbourg* ("Popol-Vuh" Introduction, pp. LXXIII, LXXXVII, CXII, etc). *Alex. von Humboldt* ("Vues des Cordillères et monuments des peuples indigènes de l'Amérique," 1861. Vol. I, pp. 383 and 383; II, pp. 356 and 357). *Bancroft, H. H.*, (Vol. III, cap. X, pp. 450 and 451; and especially Vol. V, cap. III, from p. 159 on). As usual, very full and valuable, although he does not mention any source older than *Núñez de la Vega*. Finally, *A. Bastian* ("Die Culturlander des alten Amerika," 1878, Vol. II, pp. 360 and 362). The latter says that Votan found Chiapas already peopled. This is not confirmed by what I know of Vega and of the other (later) authority *Don Ramon Ordoñez y Aguilar* ("Historia de la Creacion del Cielo y de la Tierra" MSS. at the "Museo Nacional" of Mexico). Votan was "sent to divide and distribute the land" *Cabrera* says ("Beschreibung, etc.," "Teatro," p. 33), basing upon verbal communications of *Ordoñez y Aguilar*: "He (Votan) assures, that he brought seven families to this continent, of Valum Votan, and assigned land to them."

They not only indicate the first day of each "week" of five days, but they also designate the years of the calendar. It is well-known that the largest authentically established cycle of Central American and Mexican natives consisted of 52 years, that is of a thirteen-fold recurrence of the same series of four, named alike, respectively as one of the four initial days of the weekly indications. This peculiarity, coupled with the positive description furnished in the "Popol-Vuh" of the segmentation of four original kins into a number of smaller ones, and with the fact that nearly every aboriginal settlement, at the present time, divides into four principal groups of inhabitants, becomes suggestive of the inference, not only that the consanguine group was the original type of social organization at the remotest period, but that the ethnography of Mexico and Central America may even be derived from a segmentation of primitive kins, and reassociation of these fragments into tribes, under the influence of time and mutation of residence, dialectical variation aiding.²⁹

²⁹ Without quoting superfluously to prove well-known facts — household words so to say, in Mexican and Central-American archaeology — we will place side by side the names of the days of the Mexican, Nicaraguan, Yucatecan, QQuiché, Chiapanecan, and Tarascan month.

NAHUATL.			MAYA.		TZENDAL.
<i>Mexican.</i>	<i>Niquirán.</i>	<i>Tarascan.</i>	<i>Maya.</i>	<i>QQuiché.</i>	<i>Chiapas and Soconusco.</i>
Cipactli,	Cipat,	Inbeart,	Ymix,	Imox,	Imox,
Ehecatl,	Ecat or Hecat,	Inthaatl,	Yk,	Ig,	Igh,
Calli,	Calli,	Inbani,	Akbal,	Akbal,	Votan,
Cuetspalin,	Queepal,	Inxichari,	Kan,	Qat,	Chanan,
Cohuatl,	Coat,	Inchini,	Chicchan,	Can,	Abah,
Miquiztli,	Missiste,	Inrini,	Quimij,	Camey,	Tox,
Mazatl,	Macet,	Inpari,	Manik,	Quich,	Moxic,
Tochtli,	Toste,	Inchon,	Lamat,	Ganel,	Lambat,
Atl,	At,	Inthahul,	Muluc,	Toh,	Molo,
Yizcuintli,	Yzquindi,	Intzini,	Oc,	Tzy,	Elab,
Ozomatli,	Ocomate,	Intzonlabi,	Chuen,	Batz,	Batz,
Mallinalli,	Mallinal,	Intzimbi,	Ev,	Cl,	Evob,
Acatl,	Acato,	Inthihul,	Been,	Ab,	Been,
Ocelotl,	Ocelot,	Inixotzini,	Gix,	Itz,	Hix,
Quauhtli,	Oate,	Inchini,	Men,	Tziquin,	Tzibin,
Coeaquauhli,	Coscagoate,	Iniatl,	Quib,	Ahmak,	Chabin,
Olin,	Olin,	Intaniri,	Caban,	Noh,	Chic,
Tecpatl,	Tapecat,	Inodon,	Edznab,	Tihax,	Chinax,
Quiahuitl,	Quialit,	Inubli,	Cauac,	Caok,	Cahogh,
Xochitl,	Sochit,	Inettuni,	Ajau,	Hunahpu,	Aghual.

The four leaders (as I may be permitted to call them), are respectively: In Mexico, *Tochtli*, *Acatl*, *Tecpatl*, *Calli*. In Michhuacan, *Inchon*, *Inthahul*, *Inodon*, *Inbani*. In Chiapas, *Votan*, *Lambat*, *Been*, *Chinax*. In Guatemala, *Akbal*, *Ganel*, *Ab*, *Tihax*. Finally in Yucatan, *Kan*, *Muluc*, *Gix*, *Cauac*.

I have not the means of discussing the Tarascan calendar of Michhuacan; it is suf-

It is not surprising therefore if, of the earliest traces which are met with concerning such Aborigines as spoke the "good sound"

sufficient for my purpose to establish its identity, in system, with the others. The Nicaraguan days are corruptions of the Mexican names, the "Niquiran" being a "Nahuatl" dialect.

Taking now the four remaining groups, we place opposite to each word its translation or interpretation so far as I can trace it, which is of course not always possible.

Mexican.	Q Quiché.	Maya.	Chiapaneco.
Cipactli, <i>Marine monster.</i>	Imox, <i>Swordfish.</i>	Ymix, <i>Dragon.</i>	Imox.
Ehecatl, <i>Wind.</i>	Ig, <i>Breath.</i>	Yk, <i>Breath or wind.</i>	Igh.
Calli, <i>House.</i>	Akbal, <i>chaos (?)</i>	Akbal, (See below).	Potan.
Cuetzpallin, <i>Lizard.</i>	Cat, <i>Lizard.</i>	Kan, <i>Snake.</i>	Chanan, <i>Snake.</i>
Cohuatl, <i>Snake.</i>	Can, <i>Snake.</i>	Chiechan.	Abah, <i>Stone (?)</i>
Miquiztli, <i>Skull.</i>	Camey, <i>Death.</i>	Quimij, <i>Death.</i>	Tox.
Mazatl, <i>Deer.</i>	Quich, <i>Deer.</i>	Manik, (See below).	Moxic.
Tochtli, <i>Rabbit.</i>	Ganel, <i>Rabbit.</i>	Lamat.	Lambal.
Atl, <i>Water.</i>	Toh, <i>Shower.</i>	Muluc.	Molo.
Ytzacuintli, <i>Dog.</i>	Tzy, <i>Dog.</i>	Oc.	Elab.
Ozomatli, <i>Monkey.</i>	Batz, <i>Monkey.</i>	Chuen, (See below).	Batz, <i>Monkey (?)</i>
Malinalli, <i>Knot or twist</i>	Cl, <i>Broom.</i>	Eb, <i>Staircase.</i>	Eoob.
Acatl, <i>Cane.</i>	Ah, <i>Cane.</i>	Been.	Recen.
Ocelotl, <i>Wild cat or tiger.</i>	Itz, <i>Wizard.</i>	Gix, <i>Wizard.</i>	Hlx.
Quauhtli, <i>Eagle.</i>	or Tziquin, <i>Bird.</i>	Men, <i>Builder (?)</i>	Tzibin.
Cozcaquauhtli, <i>Turtle.</i>	Ahmak, <i>Owl.</i>	Quib, <i>Gum or wax.</i>	Chabin.
	Noh, <i>Temperature.</i>	Caban.	Chic.
	Tihax, <i>Obsidian.</i>	Edznab.	Chinax.
	ture, <i>Cook, Rain.</i>	Cruac.	Cahogh.
Ollin, <i>Motion.</i>	Hunahpu, <i>Shooter out of a tube.</i>	Ajau, <i>Chief.</i>	Aghual.
Tecpatl, <i>flint.</i>			
Quiahuitl, <i>Reed.</i>			
Xochitl, <i>flower.</i>			

For the interpretation, as above attempted, I have consulted the following very limited number of authors:—Brasseur de Bourbourg (*"Relation des choses de Yucatan, etc."*) *"Popol-Fuh," "Grammaire Quiché," "Ruines de Palenqué."*) H. H. Bancroft, (Vol. II and III). Orozco y Berra, (*"Geografía de las Lenguas."*) and other sources. Mr. Bancroft translates the Q Quiché "akbal" by *chaos*. I would suggest "*household*," basing upon the following note of Mr. Brasseur: (*"Chronologia antigua de Yucatan, etc."*) por Don Juan Pío Pérez in "Choses de Yucatan," p. 375). "Akbal, mot vieilli qu'on retrouve dans la langue Quiché avec le sens de marmite, vase, peut être le même que le mot *con ou comill* des Mexicains." Sr. Pérez says about the word: "desconocido: tambien se halla entre los días chiapanecas, escrito *Aghual*," (p. 374). In this the learned Yucatan is mistaken, for Aghual corresponds to the Maya and Q Quiché "Ajau" or "Ahau." Now the pot or rather kettle, was distinctly connected with the housewife, and the word "Akbal" being, as the Abbé tells us, out of use, the suggestion that it may have been used to indicate something like the Mexican "Calli"—house,—is at least permitted.

I have deliberately translated "Kan" by *snake*, instead of by "*cord of hennequen*" as Pío-Pérez has it (p. 372). Compare note 1 by the Abbé.

Manik is interpreted by Pío-Pérez as follows: "es perdida su verdadera acepcion; pero si se divide la expresion man-ik viento que pasa, quizá se entenderia lo que fué." If this is accepted, then the signification might be: "*fleetness*," "*swiftness*," or "*rapidity*,"—some of the attributes of the *deer*, which is the corresponding sign in both the Mexican and Q Quiché.

Chuen, for the reasons indicated by Brasseur (note 3, p. 372 of "*Chronologia, etc.*") should be "*monkey*," as well as in the three other idioms.

In regard to "Gix" Sr. Orozco y Berra (Part II, V, p. 103), copies the three interpretations of Don Pío-Pérez, one of which amounts to "the act of plundering or rob-

or "Nahuatl" language in Mexico, we gather the information that they started off in bands constituting "lineages" or kins. This

bing a tree." Might there be any vague connection between this and the Mexican "Ocelotl" or beast of prey?

The word "Cauac" is mentioned as "desconocido" or disused. Still the analogy in sound with the QQuiché "Caok" rain, is striking, as well as with the Tzendal "Cahogh" and finally also with the Mexican "Quiahuitl."

In regard to the calendar of Chiapas, I regret to say that the material at my command is by far too limited to venture much of an interpretation. Not one of the few Tzendal vocabularies or Grammars yet existing is within my reach. Still I must note here: "Chan" in Tzendal signifies *Snake*, therefore my translation of "Chanan." *Brasseur de Bourbourg* ("Recherches sur les Ruines de Palenqué," Cap. II, p. 32, notes 4 and 5).

"Abah" probably *Stone* ("Palenqué," p. 65, note 5).

"Butz" as *monkey*, is identified with the three other signs of the same day by *Brasseur* ("Popol Vuh," Introd. p. CXXXV, note 5, Part II, cap. I, p. 69, note 4).

Furthermore, the signs Imox, Igh, Hix, and Cahogh are, in sound at least, analogous, if not identical, with the corresponding signs of the QQuiché and Maya calendars, and the signs Lambat, Molo, Been, and Aghual, are nearly alike to those of the same days of the Maya alone, whereas, Tzibin reminds of the Tziquin in QQuiché.

Taking now the Mexican calendar as a basis, we cannot fail to notice:

(1). That fifteen of its signs are identical with those of the QQuiché.

(2). Three are absolutely identical with signs of the Maya, and five more are presumably identical also.

(3). Two are identical with signs of the Tzendal, and two more presumably so.

Therefore our assumption appears justified, that:—

(1). The Mexican and QQuiché names of the days have a common origin.

(2). That the same is likely in regard to the Maya, since the Maya and QQuiché are regarded as belonging, linguistically, to the same stock.

(3). That a presumption in favor of a similar relation towards the Tzendal of Chiapas may be admitted since, besides the four signs recognized as common to both calendars, there are at least eight more which, in sound, are identical with others of the Maya and QQuiché.

I feel authorized, consequently, to conclude:—

(1). That the names of the days given by the four linguistic clusters above stated, were probably, originally identical.

(2). That these names, therefore, had a common origin.

This origin is stated as follows:—

Mendieta (Lib. IV, cap. XLI, p. 537), "and these Indians affirmed, that in ancient times there came to this land twenty men, and the chief of them was called Cacalcan. . . . This writes the bishop of Chiapas. . . ." This bishop of Chiapas was *Fray Bartolomé de Las Casas*, who, in the MSS., "*Historia apologética de Indias*" (Vol. III, cap. 124), appears to be more detailed. I quote *Las Casas* from *Brasseur* and from *H. H. Bancroft*, (Vol. 3, p. 465), where he says (Cap. 123),—the MS. itself not being accessible to me. Now it is commonly admitted, and this admission (whether correct or not) is so general, that no quotations are needed in evidence, that *Cuculcan* or *Coculcan* is identical with the Mexican *Quetzalcohuatl*. To *Quetzalcohuatl*, however, is attributed the formation of the *Mexican Calendar*. (*Torquemada*, Lib. VI, cap. XXIV, p. 52. *Mendieta*, Lib. II, cap. XIV, pp. 97, 98.)

In regard to the origin of the Tzendal Calendar, the tradition is very clear. *Boturini* ("Idea, etc.," § XVI, pp. 115 to 121). Quoting *Núñez de la Vega* (32, § XXVIII of the "Constitución Diocesana") "y prosigue el Prelado diciendo, que al que llamaban *Coslahuntox* (que es el Demonio, según los Indios dicen, con trece potestades) le tienen pintado en Silla, y con hastas en la cabeza como de cuerno, quando dicho *Coslahuntox* se ha de corregir en Ymos, ó Mox, y no está puesto en el Kalendario por Demonio,

was the case with the so-called "Toltecs,"³⁰ and with all their successors, such as the "Tezcucans," "Tecpanecans," and others, including the ancient Mexicans.³¹

sino por cabeza de los veinte Señores, Symbolos de los días de el Año, y assi viene á ser el primer Symbolo de ellos." (See also Idem, pp. 118, 119, quoting Nuñez de la Vega, 33, 34, and 35), "concuerría el Systema de los Kalendarios de Chiappa, y Socónusco con el Tultéco, . . . pues en lugar de los quatro Carácterés Tecpatl, Calli, Tóchtli, Acatl, se sirven los de Chiappa de quatro Figuras de Señores, Votan, Lambat, Bèen, y Chinax, etc., etc."

Clavigero (Lib. II, cap. XII, p. 164). "The Chiapaneca, if we can place any reliance upon their traditions, were the first settlers of the New World. They claim that Votan, the grandson of the venerable old man who built the great ark in order to save himself and his family during the deluge, and who was one of those who erected the high building that reached into the clouds, set out by special command of God, to people the country." Adopted and quoted also by Señor Don Francisco Pimentel, (*"Cuadro Descriptivo y Comparativo de las Lenguas Indígenas de México,"* 1835, Vol. II, p. 232.) *Clavigero* (Lib. VI, cap. XXIX, p. 412, Vol. I) "The Chiapaneca Instead of the figures and names of the rabbit, cane, flint, and house, used the names Votan, Lambat, Been, and Chinax, and instead of the Mexican names of the days, they adopted those of twenty celebrated men of their ancestry, among which the four names above mentioned took the same place as among the Mexicans the Rabbit and the others." Compare also, in the appendix to the same volume, p. 683, the "*Letter of the Abbé Don Lorenzo Hervás,*" Cesena, 31 July, 1780. *Clavigero* (Vol. II, "Disertations, etc.," Cap. II, p. 281). After recalling the tradition of Votan, quoting from Nuñez de la Vega, he adds in note b, "Votan is the name of the leader of the 20 celebrated men, after which the 20 days of the month of the Chiapanecas are named." These statements, which rest upon the writings of Nuñez de la Vega and of Ordoñez y Aguilar, are adopted, among later writers, by:—

Brasseur de Bourbourg ("*Popol-Vuh,*" Introduction, § V, p. LXXII. "*Chronologia,*" in "*Relation des choses du Yucatan,*" p. 374, note 4).

The identity of the twenty days of the Chiapanecan months with the names of twenty leaders of as many kins, is very likely, therefore; and since we have found the close resemblance of the Chiapanecan Calendar with that of the Yucatecan Maya, it is not unreasonable to suggest: that the names of the Maya days originally denoted the same twenty kins also. If such is the case (as the tale of Cuculkan and of his nineteen followers also seems to indicate), then the twenty signs of the QQuiché have a similar origin and finally, the actual identity of the QQuiché Calendar with the Mexican or Nahuatl proper leads to the inference that the twenty names of days of the Tzendal, Maya, and Nahuatl groups of sedentary Indians in Mexico and Central America, indicate a common origin of these three clusters, from twenty kins or clans, or gentes, at a remote period.

Within these twenty kins there appear four more prominent than the other. This again may indicate a still older derivation from four, out of which the remaining sixteen sprang through segmentation. How such segmentation may occur is plainly stated in the "*Popol-Vuh,*" and has been fully referred to by me in "*Treasure of Lands*" (p. 391, 392, note 7), to which, in addition to the Indian authority, and to Mr. Morgan's "*Ancient Society*" (Part II, Chapter IV), I beg leave to direct the "curious reader." In regard to the actually prevailing division of Indian settlements into four quarters, it is asserted by *Brasseur de Bourbourg* ("*Popol-Vuh,*" Introduction, p. 117), "Enfin, presque toutes les villes ou tribus sont partagées en quatre clans ou quartiers, dont les chefs forment le grand conseil."

I give the above as mere suggestions, begging for their acceptance in a kindly way, since they are not intended to be thrust upon the reader as "results." But I cannot resist the temptation to submit some remarks here, on other peculiarities exhibited

About the middle of the thirteenth century the Mexicans while on a migration towards more southern regions, made

by the so-called calendars just named, which peculiarities may throw some light on the questions raised, as to whether they originally denoted kins or not.

With a single exception (Cipactli), the Mexican and allied calendars contained the name of not one object, or phenomenon, which might not be met with *somewhere* over the wide area which the three linguistical stocks occupied at the time of the Conquest. Still, as Sr. Orozco y Berra strikingly proves (" *Geografía de las Lenguas*," Parte IIa, Cap. V, p. 107), the Mexican month contains the names of animals unknown to the ultimate home of the tribe as well as to more northern regions. Thus the *monkey* ("Ozomatli") is not found on the high central tableland. In regard to the sign Cipactli, I shall elsewhere refer to this sign, which may perhaps denote a "cuttle-fish" of monstrous dimensions.

Supposing now (since we have no proof yet to the contrary), that this "marine monster" was also an inhabitant of tropical seas, it must strike us that the twenty signs for the days of the aboriginal calendars under consideration

- (1). Represent types and phenomena which are met with, *not exclusively, but still all*, within the area of Mexico and Central America.
- (2). That some of the animal types are limited to tropical and low regions only.
- (3). That none of the animals belong exclusively to the temperate zone of North America.

Consequently, that these signs are of a meridional origin, and even, taking into account that the monkey is not found in the valley of Mexico, that they originated to the south of it. Still, the four "Leaders," as I have called them (the first signs of each "week" of five days), namely: Rabbit, cane, flint, and house,—might as well have been selected at the north.

It is a fact abundantly proven, that the kins or gentes composing the tribes of North America are named after a principle identical with that found in the naming of the days among the aborigines of more southerly latitudes, namely: after objects and natural phenomena. Mr. Morgan has given the names of the gentes of at least thirty tribes, consisting in all of two hundred and ninety-six gentes. Of these two hundred and ninety-six names, ninety-eight are signs of the Mexican days, repeatedly found in the different tribes. These signs are as follows:—

Iztacniltli, Dog, mostly found, however, as wolf.....	22 times.
Quauhtli, Eagle.....	12 "
Cozcaquauhtli, Hawk (although it is the "ringed vulture").....	8 "
Mazatl, Deer, Elk, Caribou, Antelope.....	20 "
Cohuatli, Snake.....	9 "
Atl, Water (also as "Ice," "Sea," etc.).....	4 "
Miquiztli, Skull (as "Head").....	1 time.
Ollin (as "many seasons" and "Sun").....	2 times.
Calli, House (as "high village" and "lodge").....	3 "
Tecpatl, Flint (as "knife").....	2 "
Ocelotl, Tiger (also as "panther" and "wild cat").....	5 "
Ehecatl, Wind.....	1 time.
Acatl, Cane (also as "Indian corn").....	3 times.
Tochtli, Rabbit (also as "hare").....	3 "
Cuetzpallin, Lizard ("frog").....	1 time.
Xochitli, Flower (as "Tobacco").....	1 "
Quiahuitl, Rain.....	1 "

I beg to observe, that if I have added "Cozcaquauhtli" to this list, supposing it to be the equivalent of "Hawk," this is a mere suggestion, and not an affirmation on my part.

Thus sixteen, if not seventeen, of the twenty signs of days of the Mexican month, are found in North America as "*totems*" *probably of aboriginal clans or kins*.

It is further interesting to note, that of the nine clans composing the Moqui tribes of Arizona, the names of seven correspond to signs of Mexican days, (" *Ancient Society*," Part II, p. 179). What little is known of the Laguna Indians foreshadows a similar result (p. 180), thus permitting the query, whether the pueblo Indians of the

their first appearance in the northern sections of the former republic of Mexico, as a cluster of seven kins, united by the bond of common language and worship.³² The names of these seven kins are distinctly stated and it is not devoid of interest to notice that some of these names were perpetuated as late as 1690 among the numerous "Indian wards" of the present City of Mexico.³³ We may as well add here, that these

central west might not perhaps show a closer connection yet between the very ancient Mexican kins as denoted by their days, and the gentes composing their own tribes.

After these speculations, which I submit for what they may be worth, and with the distinct reserve that I do not attach any value to them save as hints and queries for further investigation, I beg leave to state, that in my fourth paper "On the Creed and Belief of the Ancient Mexicans," I intend to discuss all these points with more thoroughness, and, I hope, with the aid of more suitable material than that now at my command.

³⁰ *Ixtlilcochitl* ("Relaciones históricas" "Segunda Relacion," Kingsborough, Vol. IX, p. 323) "y casi el ultimo de estos años se juntaron dos cabezas principales y los otros cinco inferiores á tratar si se quedarían en esta tierra ó si pasarían mas adelante." Also "Noticias de los Pobladores y Naciones de esta Parte de America llamada Nueva-España" ("Tercera Relacion de los Tultecas," Kingsborough, IX, p. 393), "Estos siete caudillos . . . con todas sus gentes vinieron descubriendo y poblando por todas las partes que llegaban." ("Histoire des Chichimèques," Cap. 1, p. 13), "Ils avaient sept chefs, et choisissaient alternativement un d'entr'eux pour les gouverner." In addition to authorities quoted on the Toltèques in "Tenure of Lands" (p. 388, note 7, to p. 392). I refer to *Fetancurt* ("Teatro Mexicano," Vol. I, Part II, Trat. I. Cap. IV, p. 234). *Granados y Gálvez* (2a Parte, p. 31).

³¹ "Turdes Americanas" (p. 31), "bien es que los mapas de estos no nos pintan tierras, sino familias: y como estos vaguearon sin fizeza alguna por tan varios rumbos. . . ." It is superfluous to quote authorities in full, I but refer to "Histoire des Chichimèques" (Cap. V, pp. 38, 39; X, p. 70). *Sahagun* (Lib. X, cap. XXIX). The whole chapter is very important. *Durán* (Cap. II, pp. 10, 11, 12, 13, 14, 15, 16, III; pp. 19, 20, 21, and plates I, to Trat. I^a, also pl. 1, to Trat. II^a). *Acosta* (Lib. VII, cap. II, p. 454, and cap. III entire). *Mendieta* (Lib. II, cap. XXXIV, p. 147). *Torquemada* (Lib. I, cap. XXIII, p. 51; cap. XXVI, p. 54; Lib. II, cap. I, p. 78, etc.). *García* ("Origen, etc.," Lib. III, cap. I, p. 81; Lib. V, cap. III, p. 321). *Herrera* (Dec. III, Lib. II, cap. X, pp. 59, 60). *Veytia* (Lib. II, cap. VI, p. 39 of 2d Vol.). *Fetancurt* (Vol. I, "Teatro," Parte II, Trat. I, cap. IX, pp. 254, 255). *Chirigero* (Lib. II, cap. IV, pp. 146, 147), and others.

³² The number seven (7) is almost generally accepted. Compare "Tenure of Lands" (p. 309, and note 21). Besides the authors there mentioned as accepting seven kins, I refer to *Dr. Ad. Bastian* ("Die Culturkinder des Alten Amerika," Vol. II, p. 40, note 2). *Cabrera* (in *Minutoli's Palenque*, p. 77. Rather confused).

³³ I have gathered these names out of the following sources: *Durán* (Cap. III, pp. 20, 21), *Tezozomoc* (Cap. I, p. 6, Kingsborough, Vol. IX), *Veytia* (Lib. II, cap. XII, p. 91 of 2d Vol.). They are stated as follows:—

By Durán.	By Tezozomoc.	By Veytia.
Yopica.	Yapica.	Yopica.
Tlacochealca.	Tlacochealca.	Tlacochealca.
Vitznagou.	Huitznahuac.	Huitznahuac.
Cuateopan.	Cihuateopaneca.	Cihuateopaneca.
Chalmeca.	Chalmeca.	Chalmeca.
Tlacateopaneca.	Tlacateopaneca.	Tlacateopaneca.
Yzquiteca.	Yzquiteca.	Itzuintecatli.

Indian wards, their peculiar organization, and their communal lands, disappeared only after the secession of Mexico from Spain, not more than fifty years ago.³⁴

There is, however, a fundamental difference between Durán on one hand, and Veytia and Tezozomoc on the other, inasmuch as the former says that these seven names were those of the *tutelar deities* of the seven kins ("barrios"), whereas the latter two give them as the names of *these kins themselves*. The seven tutelar deities are also named by them, and called as follows: "Quetzalcohuatl, Tlazolteotl, Macuilxochiquetzalli, Chichilticcentéotl, Piltzinténhtli, Tezcatlipuca, and Mictlantéhtli" (*Veytia*, as above quoted). *Tezozomoc* (p. 6), calls these gods: "Quetzalcohuatl, Oxomoco, Matlaxochiquetzal, Chichilticcentéutl, Piltzintecutli, Metéutl, Tezcatlipuca, Mictlantécutli y Tlamacazqui, y otros dioses con ellas. . . ." A discussion of these names is very difficult, and its results appear doubtful. Still, we distinctly recognize: "Tlacochealca," plural of "Tlacochealcatl," therefore, "men of the house of darts." (See "*Art of War*," p. 121, note 104). "Huitznahuac," according to *Molina* (II, p. 157), "uitztic" is a pointed object, "uitztli" a large thorn, but "uitztlan" is the south. "Nahuac," in this instance, probably (or rather possibly), signifies "among" or "near to," thus perhaps, "people from the south" or "from near the thorns." (Example: "Quauhnahuac"—"por de los arboles," *Molina*, II, p. 63. *Pimentel* "*Cuadro descriptivo*, Vol. I, pp. 170, etc.) "Cihuateopaneca" from "Cihuatl" woman, and "tecpan" official house. "Tlacteopaneca" from "Tlacaatl" man, and "tecpan." Finally, "Itzcuintecatl" seems to derive from "Itzcuhtli" Dog, and "tecatl." The latter again decomposes into: "nitla tequi" to cut (*Molina*, II, p. 105), and "tlacaatl" man, therefore the whole would be "dogcutters." "Yzquitecatli" gives a still more curious etymology, which is, however, so improbable, that we refrain from mentioning it even

It will be seen at a glance that none of these seven kins were named after the Mexican days, the last one alone containing, perhaps, the word "Itzcuhtli," but even this is very doubtful yet. I shall but refer here to a singular passage in *Durán* (Cap. III, p. 20). "Ya hemos dicho como traian á su principal dios, sin cuyo mandado no se osaban menear: traian empero otros siete dioses, que á contemplacion de los siete cuevas donde auian auitado siete congregaciones de gentes ó siete parcialidades, los reverenciaban con mucha grandeza."

After the capture of Tenochtitlan by Cortés, its site was reserved by him for the erection thereupon of the Spanish city, whereas the site of Tlatilulco became the Indian settlement for a time, or rather was intended for that purpose. *Cortés* ("*Carta*, IV, pp. 110, 111, Veda I). *Motolinia* (Trat. III, cap. VII, pp. 180, 181). *Oviedo* (Lib. XXXIII, cap. XLIX, pp. 528, 530). *Juan de Torquemada* (Lib. IV, cap. CII, p. 572. Lib. III, cap. XXVI, p. 290). *Herrera* ("*Descripción de las Indias Occidentales*," Cap. IX, p. 17. "*Historia*," Dec. III, lib. IV, cap. VIII, p. 122). *Vetancurt* ("*Crónica de la Provincia del Santo Evangelio de México*" 4th Part of the "Teatro," pp. 124, 131, 132, 212, and 213).

It is the latter author, *Vetancurt* ("*Crónica*," pp. 131, 132, 212, and 213), who gives us the names and numbers of the Mexican quarters, "barrios," or localized kins who, under the form of "Indian wards," still existed in 1690. I assume this date from the fact that the "Licencia" of the "Comisario general de Indias," is dated 17 April, 1692, (p. 13, Vol. I, "*Teatro*"). Besides mentioning the four great quarters of Mexico (p. 124), of which we shall hereafter speak, he says: "Los barrios son veinte, donde están once ermitas fabricadas que sirven para sacramentar en ellas á los que no tienen casa, decente, sirviendo de oratorios del barrio, donde en las fiestas particulares se suelen decir misas rezadas, y en algunas fiestas de devocion quanto la piden." He also gives us (pp. 212, 213) information about Tlatelulco,—information which proves that the aborigines settled there "en seis parcialidades, que cada cual tiene sus barrios, y veinte ermitas con sus titulares que celebran." This is rather obscure, and I shall

While the seven consanguine clusters above mentioned composed, to all intents and purposes, one tribe as towards outsiders, there still appear among them germs of discord which, at a later date, caused a disruption of mutual ties. The details are too vague and too contradictory to allow any inference even as to the real nature of such dissensions.³⁵ One fact, however, is ascertained, namely: that the whole group bore in common all the hardships and vicissitudes of a wandering life and the encroachments, aggressions and temptations from outsiders; that they had sheltered together in a safe retreat, and that only when relative safety from violence was secured, a permanent division took place. These considerations should dispose of the

therefore give the names of the Mexican "barrios" by the side of the "ermitas" of Tlatelulco, leaving the reader to notice coincidences himself.

"Barrios" of Mexico.

Santo Cristo de Tzapotla.
Santa Verónica de Huehucalco.
Santa Cruz de Teopancaltitlan.
San Pedro de Cihuateocaltitlan.
Espiritu Santo de Topyco.
San Felipe de Jesus de Teocaltitlan.
Santiago de Tlaxilpan.
Los Reyes de Tequicaltitlan.
La Candelaria de Atlampa.
La Ascension de Tlacacomoco.
San Diego de Amanalco.
El Niño Jesus de Tepetitlan.
El Descendimiento de Atzacapan.
San Salvador de Xihuitongo.
La Natividad de Tequixquilpan.
San Salvador de Necaltitlan.
La Concepcion de Xoloco.
San Juan de Chichimecapan.
San Antonio de Tezcatzonco.
San Sebastian Copolco.

"Ermitas" of Tlatelulco.

Santa Ana Atenantithec.
Santa Lucia Telpochentitlan.
La Concepcion de Atenantitlan.
San Francisco Mecantaluco.
La Asuncion de Apazhuacan.
San Martín Atzacapan.
Santa Catalina Colhuatlan.
San Pablo Tolquechiucan.
Nuestra Señora de Belen Tlaxoxiuhco.
Los Reyes de Capotitlan.
San Simon Iztatla.
Santa Inés Hueipantongo.
San Francisco Izcatala.
Santa Cruz Azococolocan.
San Antonio Tepiton.
La Asuncion de Tlayacaltitlan.
San Francisco Cihuitapan.
San Juan Huitznahuc.
Sa Asuncion de Izayac.
Santa Clara Acozac.

I have italicized those names which are also found among those of the seven original kins above enumerated, and thus we find three of them, one in Mexico, and two among the "Ermitas" of Tlatelulco.

³⁵ *Fernan Gonzalez de Eslava* ("Coloquios espirituales y Sacramentales, y Poesias Sagradas," Second Edition, 1877, by Sr. Icazbalceta.) The learned editor makes the following note, 50. to page 57. "Cuando se reedificó la ciudad de México, despues de la conquista, se colocaron en el Centro las casas de los españoles, y los Indios levantaron las suyas alrededor de aquellas. Esta poblacion india se dividió en cuatro barrios ó *parcialidades*, regidos por caciques de su nacion, sujetos á un gobernador de la misma. Los barrios principales eran San Juan y Santiago." Calling my attention to this note in his letter of 14 Nov., 1878, my esteemed friend adds: "Con el tiempo se confundió la poblacion y desaparecieron esos barrios; pero aun quedó el nombre y los bienes que poseian las '*parcialidades*' los cuales desaparecieron tambien en mi tiempo."

³⁶ The dissensions between what subsequently became the Mexicans and the Tlatelulcans are so variously described by the authorities, that it is hardly worth while to discuss them.

assumption, frequently made, that the Mexicans were divided into two distinct clusters at the outset.

A council of chiefs, representing the seven kins meeting on equal terms, composed the government of the ancient Mexicans at that period of their history. Among these, occasional "old men" of particular ability loom up as leading advisers. But no permanent general office of an executive nature is mentioned; although even occasional braves acquired historical prominence through their deeds of valor and of sagacity.³⁶

But, while the organization was thus amply sufficient for the needs of a straggling band, Indian worship or "medicine" (as the native term implies) represented, inside of that organization, the lingering remains of what we have already suggested to be the oldest aboriginal clusters of society. Corresponding to the four original kins of the QQuiché, to the four leading days of the calendar with the traditions attached to their origin, we find among the ancient Mexicans at that period four chief medicine men, or "old men," who at the same time are "carriers of the God."³⁷

³⁶ "Tenure of Lands" (P. 396 and 398, Notes 21 and 22). In addition to the authorities quoted there, I refer to: Gomara ("Conquista de Méjico" Vedia I, p. 431). "y dicen que no trajeron señores, sino capitanes." Idem p. 433. "De los reyes de Méjico". Motolinia ("Epistola proémial," p. 5). "aunque se sabe que estos Mexicanos fueron los posteriores, y que no tuvieron señores principales, mas de que se gobernaron por capitanes." —Mendieta (Lib. II, cap. XXXIV, p. 148). "Dicen que el ejército mexicano trajo por caudillos o capitanes diez principales que los regian, . . . Entre estos eligieron, luego como hicieron su asiento, por rey y principal señor á Tenuch." Torquemada. (Lib. II, cap. I, p. 78; cap. XII, pp. 94 and 95).

The fact of the election of the first so-called "King" of the ancient Mexicans, so generally acknowledged that no evidence of it is needed, is proof enough that, previous to it, the government of the Mexicans was at least, not monarchical. The words of Torquemada. (p. 94, vol. I.) "Dicese, que aviendo pasado veinte y siete años, que se gobernaban en comun, los unos, y los otros, les tomó gana de elgír Rey, . . ." are plain enough.

Aside from the "leaders" (caudillos) of the Kins frequently mentioned, occasional war-chiefs or directing braves turn up during this period of their wandering existence. Thus, a chief whom they called "Mexi" is mentioned by Acosta (Lib. VII, cap. IV, p. 480). Sahagun (Lib. X, cap. XXIX, p. 138 and 139). Herrera (Dec. III, lib. II, cap. X, p. 60); and another very famous warrior, "Humming Bird." (Huitzilhuilitl) led the Mexicans during their fray with the valley-tribes at Chapultepec, losing his life in the Sally by which they broke through their surrounding enemies. Durán (Cap III, p. 27; IV, 30). Acosta (Lib. VII, cap. V, p. 483). Torquemada (Lib. II, cap. III, p. 82; IV, p. 84; Lib. III, cap. XXII, p. 289). Vetancurt (Parte IIa, Trat. Io, cap. IX, p. 261; cap. X, p. 265 and 266). Granados y Galvez (Tarde Quinta, p. 151). Veytia (Lib. II, cap. XII, p. 97; cap. XIII, p. 110; cap. XIV, p. 116, 124; cap. XV, p. 130 and 131). He affirms that "Humming Bird" was the first "King of the Mexicans," which, however, is expressly disproved by other authors.

³⁷ Tezozomoc ("Crónica" cap. I, p. 6), mentions the four old men who carried the so-called sister of Huitzilopochtli, "y á esto dijo Tlamacazqui Huitzilopochtli á los viejos

It seems to indicate, that as relics of four very ancient kins, a kind of superstitious ("standing over") deference was paid to them, implying a voice and vote in the councils of the tribe.³⁸

que la solian traer cargada, (que se llamavan Quauhtlonquetzque, y Axoloa el segundo, y el tercero llamado Tlamacazqui Cuauhcoatl, y el cuarto Ococaltzin). (Cap. III. p. 8), at Chapultepec "y allí les habló Huitzilopochtli á los sacerdotes, que son nombrados Teomamaques, cargadores del dios, que eran Cuauhloquetzqui, Axoloa, Tlamacazqui y Aococaltzin, á estos cargadores de este idolo, llamados sacerdotes, les dijo."—*Durán* (Cap. III. p. 21). Llegados á aquel lugar de *Pazcuaro*, viéndolo tan apacible y alegre, consultaron á su dios los sacerdotes y pidióronle: el dios *Vitzilopochtli* respondió á sus sacerdotes, en sueños . . . "These words repeat themselves almost, several times in cap. IV. V, and VI. Finally he is very positive, (Cap. VI. p. 46), "con los quatro ayos de *Vitzilopochtli*, los quales le vian visiblemente y lo hablaban, que se llamauan *Cuauhloquetzqui*, el segundo *Ococatl* el tercero *Chachalatl* y el cuarto *Axoloua*, los quales eran como ayos, padres, amparo y reparo de aquella gente," *Acosta* (Lib. VII. cap. IV. p. 459), "Con esto salieron lleuando á su ydolo metido en una arca de juncos, la qual lleuauan quatro Sacerdotes principales, con quien el se comunicava, y dezia en secreto los successos de su camino auisandoles lo que les aua de suceder, dandoles leyes, y enseñandolos ritos y ceremonias, y sacrificios. No se mouian un punto sin parecer y mandato deste ydolo." *Herrera* (Dec. III, lib. II, cap. X, p. 60). "Llevaron este Idolo en una Arca de Juncia en hombros de quatro Sacerdotes, los quales enseñaban los Ritos, i Sacrificios, i daban Leies, i sin su parecer no se movian en nada." Besides these specifically and exclusively Mexican sources, to which others will be added hereafter, the fact of these four chief-medicine men "tlamacazqui" from "tlama"—medicine-man, (*Molina* II, p. 125), is proven by authors who rather incline to the tezcucan side. *Torquemada* (Lib. II, cap. I, p. 78), "y ordenó, que quatro de ellos, fuesen sus ministros, para lo qual, fuéron nombrados Quauhcohuatl, Apañecatl, Tezacohuatl, Chimalman," (Lib. VI, cap. XXI, p. 41, but especially Lib. IX, cap. XIX, p. 205). "De los primeros Mexicanos, que vinieron á estas Tierras, sabemos, que no traxeron Rei, ni otro Caudillo particular (contra los que tienen, ó afirman lo contrario) sino que venian regidos de los Sacerdotes, y ministros del Demonio; sobre cuios hombros venia la Imagen del Dios Huitzilopochtli, y á los consejos, y determinaciones de estos ministros eran obedecientes." The most explicit of all, however, is again *Veytia* (Lib. II, cap. XII, p. 92). At the death of Huitzilón, "y aqui fué donde empezaron las embustes de los viejos y sacerdotes que con mas inmedlacion trataban á Huitzilón; porque, ó concebido ya el ambicioso deseo de quedarse con el mando del pueblo, ó para disminuirle á este el dolor que debía causarle tan gran pérdida, . . ." (p. 94). "Esto es el origen de la famosa deldad Huitzilopochtli," (p. 90), here Veytia is in error in stating that *Tezozomoc* reports that the four priests were left with Malinalxochitl in Malinalco. This author mentions them again at Chapultepec, "*Crónica*," (Cap. III, p. 8). Further on (Cap. XIII. p. 102), "Yo me persuado á que es distinto, que Ocelopan y sus tres compañeros fueron los quatro Tlamacazquis que fingieron el embuste del rapto de Huitzilón," (p. 109), he says that the "old priests" opposed the election of a head-war-chief ("rey") "por no dejar el mando." (Also Cap XV, p. 131.)

It results from these statements, that the four "Carriers of the God" indeed exercised, or at least claimed some governmental power. In tribal society such power can only come through some kin, hence the four "medicine-men" represented four very old clans or relationships, whose names even may have been lost, whereas the former power "stood over," in the form of a participation of "medicine" or worship in the tribal business. I here recall the important utterance of *Boturini* ("*Idea*," pp. 111 and 112 of §XVI), "como fué costumbre de los Indios poner muy pocas Figuras en los mapas, baxo de cuya sombra se hallan numerosos Pueblos, y gentes; y assi dichos siete Tultécos, cuyos nombres refiere el mencionada Don Fernando, se entiende haver sido siete principales Cabezas de dilatados Parentescos, que se escondian baxo los

When the Mexicans, thus constituting a migratory cluster of kins, reached the present central valley of Mexico, they found it occupied by a number of tribes of the same language as their own, though dialectically varied. The arrival of the new-comers was to those who had already settled, a matter of either war or of adoption. Adoption became very difficult, as well on account of the number of the immigrants as of the rivalry between already settled tribes. Therefore the Mexicans were tossed to and fro, until at last the straggling remnant found a shelter on some dry patches protruding from the marsh along which the other tribes had formed their settlements.

This settlement occurred about 196 years previous to the Spanish conquest, and it limits therefore the time, within which the

nombres de sus Conductores." What the unfortunate Italian Cavaliere here says of the Toltecs, is applicable to all the other branches of the Nahuatl stock, and bears also on the four "Carriers of the God," under discussion.

Veytia affirms (Cap. XIII, p. 110. lib. II), that after the election of the Huitzilohuitl mentioned in my note 36, the god Huitzilopochtli "did not dare to claim the government of the people." Is this an indication to the effect that the four "priests" exercised a military command?

Referring to note 29, concerning the four names of the years and leading days in the Mexican and Central American Calendars, and their probable connection with as many very ancient kinships, I beg leave to add here some additional data in regard to the singular part played by the number four, in Central American and Mexican mythology and earliest tradition. In note 37, I have already alluded to the four original pairs, as mentioned by the "*Popol-Vuh*" as well as by *Sahagun*. Previous to the creation of the four men, the "*Popol-Vuh*" has the following remarkable passage: (Part III, cap. I, pp. 185-197), "In Paxil and in Cayalá, as this place is called, there came the ears of yellow and of white corn. These are the names of the barbarians (? Chio'p), who went after subsistence: the fox (Yac), the wolf (Utlil) the parrot (Qel), and the raven (Hoh), four barbarians (?) who brought them the news of the ears of yellow corn and of white corn which grew in Paxil, and who showed them the road to Paxil." "There they found at last the nourishment which went into the flesh of man made, of man formed, this was his blood, it became the blood of man, this corn which went into him by the care of him who engenders and of him who gives being." This Q'Quiché tale of four animals or "barbarians" (the latter is an interpretation of Mr. Brasseur, since "chicop" signifies simply a *beast*) carrying the material out of which man was made, also finds an equivalent in Mexican traditions, as reported by *Sahagun* (Lib. X, cap. XXIX, § 12, p. 140), of four wise men who remained in the earthly paradise of "Tamoanchan" inventing there "judicial astrology, and the art of interpreting dreams. They composed the account of the days, of the nights, of the hours, and the differences of time, which were kept while the chiefs of the Toltecs, of the Mexicans, and of the Chichimecs ruled and governed." "Tamoanchan" as paradise, is strictly equivalent to "Paxil in Cayalá" of the Q'Quiché. The tradition of the four "Tutul-Xin" among the maya of Yucatan, may also be classed among these tales. "*Series of Katunes*," "*Epochs of Maya History*," "*This is the Series of Katunes in Maya*," ("*helo la u Tzolan Katunil Ti Mayab*") in Mr. Brasseur's ("*Relation des choses du Yucatan*") also in J. L. Stephens ("*Travels in Yucatan*," Vol. II, p. 465, appendix.) Also *Durán* (Cap. XXVII, pp. 222, 224).

³³ Tylor ("*Early History of Mankind*," Edition of 1878, p. 166), "Super-stitio" or "Standing Over,"—the German "Aberglaube" in the sense of "what has remained."

organization and Institutions of the ancient Mexicans must have reached their ultimate development, to less than two centuries.³⁹

"In the midst of canes of reeds" the remains of the Mexican tribe found their future home upon a limited expanse of sod, which even their enemies on the mainland seemed to regard but as a spot fit to die upon.⁴⁰ Although much reduced in numbers, the kins themselves remained and a settlement necessitated at once their localization. How this took place, can best be told in the words of one of the native chroniclers, the Dominican monk, Fray Diego Durán.

"During the night following, after the Mexicans had finished to improve the abode of their god, and the greatest part of the lagoon being filled up and fit for to build thereon, Vitzilopochtli spoke unto his priest or keeper and said to him: "Say unto the Mexican community that the chiefs, each with their relatives, friends and connections, should divide themselves in four principal quarters, with the house which you have built for my resting place in the middle, and that each kin might build within its quarter as best it liked." These quarters are those remaining in Mexico to this day, to wit: the ward of San Pablo, that of San Juan, of Santa Maria la Redonda as it is called, and the ward of San Sebastian. After the Mexicans had divided into these four places their god sent word to them that they should distribute among themselves their gods, and that each quarter should name and designate particular quarters where these gods should be worshipped. Thus each of these quarters divided into many small ones according to the number of idols called by them Calpulteona, which is to say god of the quarter. I shall not recall here their names because they are not of importance to history, but we shall know that these quarters are like unto what in Spain they call a collation of such and such a saint."⁴¹

This statement we do not hesitate to accept as expressing gen-

³⁹ My friend, Prof. Ph. Valentini, of New York, has in hand the study of Central American Chronology proper, as well as Mexican. In his latest work "*The Mexican Calendar stone*" (published first in German as a "Lecture," and afterwards in No. 71, of the "*Proceedings of the American Antiquarian Society*"), he has given a general idea of his researches, but not any details yet about their results. If, therefore, I here admit 1325, A. D. as about the date of the so-called "foundation" of Tenuchtitlan-Mexico, it is subject to correction by him.

⁴⁰ *Durán* (Cap. IV, p. 32), *Herrera* (Dec. III, lib. II, cap. XI, p. 61).

⁴¹ "*Tenure of Lands*" (p. 400, note 29, and p. 402, notes 32 and 33). In addition to the authorities quoted, I refer to *Herrera* (Dec. III, lib. II, cap. XI, p. 61), and *Samuel Purchas* ("*His Pilgrimages*," 1625, Part III, lib. V, cap. IV, p. 1005).

uine aboriginal traditions, notwithstanding the attempt, on the part of Fray Juan de Torquemada, to impugn its truthfulness and consequently its validity.⁴² It results from it that while the kins, which for the first time in Mexican history are distinctly identified here with the "calpulli," are settling, "as best they liked;" the creation of four geographical divisions, composed each of a number of kins, is attributed here to the influence of worship or, as we have already termed it, of "medicine." This connects those, who subsequently became the four "Indian wards" of Mexico, with the four "carriers of the gods" already mentioned, and this perhaps may be considered a reminiscence of the four original relationships. Of these the sections mentioned appear like a shell, geographically enclosing a number of settled kins. The supposition is not, therefore, devoid of interest that they may have represented brotherhoods of kins, for purposes of worship and warfare. If now we substitute for *kin* the term "*gens*" adopted by Mr. Morgan, those *brotherhoods* necessarily appear in the light of as many "*phratries*."⁴³

The time of this occurrence seems almost to coincide with a division (already indicated as in progress) of the original Mexican band into *two* sections. It now culminated in the secession of a part of the tribe and its settlement apart from the main body, though not far away from it and within the lagoon also. While the "place of the stone and prickly pear" (Tenuchtitlan) remained, virtually, ancient Mexico, the seceding group founded the Pueblo of Tlatilulco as an independent community at the very door of the former. It appears as its rival even until forty-eight years previous to the Spanish conquest.⁴⁴

⁴² "*Tenure of Lands*" (p. 402, notes 32 and 33).

⁴³ Morgan ("*Ancient Society*," Part II, cap. III, p. 88) "The phratry is a brotherhood, as the term imports, and a natural growth from the organization into gentes. It is an organic union or association of two or more gentes of the same tribe, for certain common objects. These gentes were usually such as had been formed by the segmentation of an original gens." If we recall the manner in which the four "quarters" or Mexico first appeared, it will easily be seen that the analogy with phratries is indeed striking. Compare, "*Art of War*" (p. 101, and note 22, and pp. 120, 121, and notes 97, 99, 100, and 101). In "*Tenure of Lands*" (pp. 400 and (401), I have rather favored the view that these four were "calpulli" which subsequently segregated into minor quarters or "barrios." I now correct this, having become convinced that the so-called minor quarters already existed at the time of settlement (compare notes 37 and 41).

⁴⁴ *Motolinia* (Trat. III, cap. VII, p. 180), mentions a division into but two "barrios" in course of time through increase of population. "Despues andando el tiempo y multiplicandose el pueblo y creciendo la vecindad, hizóse esta ciudad dos barrios ó dos ciudades," *Ixtlilxochitl* ("*Hist. des Chichim.*" Cap. p. 72), merely states they were

It is much to be regretted that our information on this point is so meagre and unsatisfactory, as not to enable us to ascertain whether several *entire kins* separated from the rest to form the new tribe, or whether *fragments of kins* only composed the secessionists. In fact even the cause of the division is stated in such a varied and contradictory manner, that we must withhold any expression of positive views on the subject.

Without losing sight altogether of the tribe of Tlatilulco, we still must devote our attention chiefly to the inhabitants of Tenuchtitlan, in which we recognize the ancient Mexicans proper. The number of kins composing the latter at the time of their

divided in two "bands," without saying why and how this division occurred. *Durán* (Cap. V, p. 43), "Hecha esta division y puestos ya en su orden y concierto de barrios, algunos de los viejos y ancianos, entendiendo merecian mas de lo que les daban y que no se les hacia aquella honra que merecian, se amotinaron y determinaron ir a buscar nuevo asiento, y andando por entre aquellos carrizales y espadañales allaron una albarrada pequena, y dando noticia della á sus aliados y amigos fuéronse á hacer alli asiento, el qual lugar se llamaba Xaltelulli y el qual lugar agora llamamos Tlatilulco, que es el barrio de Santiago. Los viejos y principales que alli se pasauan fuéron quatro; el uno dellos se llamaba Atlaquauilitl, el segundo Huico, el tercero Opocútil, el quarto Atlacol. Estos quatro señores se dividieron y apartaron de los demas y se fuéron á vivir á este lugar del Tlatilulco, y segun opinion tenidos por hombres inquietos y revoltosos y de malas intenciones, porque desde el día que alli se pasaron nunca tuvieron paz ni se llevaron bien con sus hermanos los mexicanos; la qual inquietud á ido de mano en mano hasta el día de hoy, pues siempre auido y ay bandos y rancor entre los unos y los otros." *Acosta* (Lib. VII, cap. VIII, p. 468), and *Herrera* (Dec. III, lib. II, cap. XII, p. 62), both are but concise repetitions of the above. *Torquemada* (Lib. III, cap. XXIV, pp. 294 and 295), opposes both *Acosta* and *Herrera*, as well as the "*Codex Ramírez*," and substitutes a story about voluntary settlement of the Tlatilulca on a sandy patch near by, but apart from the others, in consequence of the old grudge or feud already mentioned. There is but little difference between this version and the preceding, the act of secession, in both, being voluntary. One singular fact is mentioned by *Vetancurt* (Part II, trat. I, cap. XI, p. 269), namely: that the Tlatilulca made a market-place for both parties. Otherwise (p. 257), he concurs with *Torquemada*. *Granados y Gálvez* (Tarde 6a, p. 174), after saying that both "eran deudos y parientes unos con otros" adds "whether this division proceeded from past quarrels, or out of the incommodities which they suffered among canes and reeds; it is certain that they divided peaceably . . ." *Veytia* (Lib. II, cap. XV, pp. 135 and 142), reporting on all the various traditions about the foundation of Tlatilulco, comes to the conclusion that the "nobles" retired to Tlatilulco, whereas the "common people" remained at Mexico. *Clarigero* (Lib. II, cap. XV, p. 178), agrees with *Veytia* in regard to the real import of the fables told concerning the ancient feuds among the migratory band, but (Cap. XVII, pp. 187 and 188), he accepts the version that these old dissensions were the causes of the final division.

I have not been able, yet, to find whether the seceding Tlatilulca formed one kin, or one brotherhood of kins, or whether they were discontented fractions of kins removing. Had *Vetancurt* given us the names of the "barrios" of Tlatilulco, we might possibly infer something from them. As it is, the fact of the four "principals" mentioned by *Durán*, seems to indicate four kins, or rather (perhaps) fractions from four kins, whom want of space probably caused to remove. They may have been crowded out, and in course of time the feeling of jealousy and rivalry sprung up of which the authorities speak both freely and frequently. See *Veytia* (Lib. II, cap. XV, p. 135).

settlement is not stated, but while some sources mention *twenty* chiefs as composing the original council of the tribe, others speak of but *ten leaders*. This might, according to the view taken, indicate in both instances *ten* kins, or *twenty* in the former and *ten* in the latter. At any rate the number is larger than that originally composing the tribe, thus showing that the segmentation so characteristic of tribal society according to Mr. Morgan, had already begun. Of the government of the tribe Clavigero says: "The whole nation was under a senate or college of the most prominent men."⁴⁵ No mention is made anywhere of a head-war-chief

⁴⁵ *Clavigero* (Lib. III, cap. I, p. 190). *Torquemada* (Lib. II, cap. XII, p. 94. Lib. III, cap. XXII, pp. 289, 290, and 291). *Durán* (Cap. VI, p. 47).

It is difficult to ascertain the actual number of kins composing the Mexican tribe at that time. The number of chiefs and their names are variously stated. *Durán* (Cap. VI, p. 47), mentions six chiefs and four priests. *Mendieta* (Lib. II, cap. XXXIV, p. 148), mentions ten chiefs. The "*Codex Mendoza*" also says ten chiefs (Tab. I. Vol. I, Kingsborough). *Clavigero* (Lib. III, cap. I, p. 190, note r), mentions twenty. It is interesting to compare the names, also those of the twenty leaders of *Torquemada* (Lib II, cap, III, p. 83), with those of the twenty "barrios" of Vetancurt.

<i>Durán.</i>	<i>Mendieta.</i>	<i>Torquemada.</i>	<i>Clavigero.</i>	"Barrios" of Vetancurt.
<i>Acacitli,</i> <i>Tenoch,</i> <i>Mecí,</i> <i>Ahuexotl,</i> <i>Ocelopan,</i> <i>Tezacatli,</i> <i>Quauhloquetzqui,</i> <i>Ocoatl,</i> <i>Chachalatl,</i> <i>Azoloua.</i>	<i>Acacitli,</i> <i>Tenuch,</i> <i>Tecineutl,</i> <i>Ahuexotl,</i> <i>Ocelopan,</i> <i>Quahpan,</i> <i>Xomimítl,</i> <i>Quentzin,</i> <i>Xocoyal,</i> <i>Xiuhcaqui,</i> <i>Atototl.</i>	<i>Acacitli,</i> <i>Tenoca,</i> <i>Nanacatzin,</i> <i>Ahuexotl,</i> <i>Ocelopan,</i> <i>Tezacatli,</i> <i>Xomimítl,</i> <i>Quentzin,</i> <i>Xiuhcac,</i> <i>Azolohua,</i> <i>Tlalula,</i> <i>Tzontliyyauh,</i> <i>Tuzpan,</i> <i>Tetepan,</i> <i>Cozca,</i> <i>Ahsti,</i> <i>Achitomecatl,</i> <i>Acohuatl,</i> <i>Mimich,</i> <i>Trzca.</i>	<i>Acacitli,</i> <i>Tenoch,</i> <i>Nanacatzin,</i> <i>Ahuexotl,</i> <i>Ocelopan,</i> <i>Tezacatli,</i> <i>Xomimítl,</i> <i>Quentzin,</i> <i>Xiuhcac,</i> <i>Azolohua,</i> <i>Tlalula,</i> <i>Tzontligagauti,</i> <i>Tochpan,</i> <i>Tetepan,</i> <i>Cozca,</i> <i>Atzin,</i> <i>Achitomecatl,</i> <i>Acohuatl,</i> <i>Mimich,</i> <i>Tezacatl.</i>	<i>Tzapotla,</i> <i>Huehucalco,</i> <i>Tecpancaltitlan,</i> <i>Cihuateocaltitlan,</i> <i>Yopico,</i> <i>Teocaltitlan,</i> <i>Tlaxilpan,</i> <i>Tequiciltitlan,</i> <i>Atlampa,</i> <i>Tlacacomoco,</i> <i>Amanalco,</i> <i>Tepetitlan,</i> <i>Atizapan,</i> <i>Xihuitengo,</i> <i>Tequixquipan,</i> <i>Mecaltitlan,</i> <i>Xoloco,</i> <i>Chichimecapan,</i> <i>Copolco,</i> <i>Tezcatzonco.</i>

I have italicized such names as are alike. We see that of the ten chiefs named by Durán and Mendieta, six are also named by the two other authorities. As might be expected, there is hardly any concordance between these names of chiefs and those of the Mexican "barrios."

If it were known to us whether, in this case, each "chief" represented a kin only, or whether Durán, Tezozomoc, and Mendieta alone indicated the true number, we could or might, of course, determine the number of the calpulli. That the chief is used to denote his kinship in the old authors is distinctly stated by *Durán* (Cap. XXVII, p. 224). This chapter relates the mission of sixty "wizards" ("brujos"—"hechiceros,") sent by the chief "Montezuma Ihnucamina" (the first "stern or wrathful chief" of that name), to an old woman or goddess purported to be "Huitzilopochtli's" mother. Arrived before the old hag (as she is described), she inquires of them for her son and for

as yet; this peculiarly military office was not yet established in permanence. However, there are indications that one executive chieftain for tribal affairs may, at least rudimentarily, have existed namely: the "Snake-woman" (cihuacohuatl). But the attributes of this office did not assign to it any marked prominence.⁴⁶

The position of the Mexican tribe, about the middle of the fourteenth century, was still a very precarious one. With barely sufficient sod to dwell upon, blockaded, so to say, by powerful tribes along the lake shore; with the independent cluster of Tlatilulco, jealous and threatening, within an arrow-shot of its homes, it was forced into a peculiar attitude of military defence. The elements for a warlike organization were contained in the autonomous kins, which were grouped into the still larger cluster of the brotherhood, and all together composing the tribe. The leaders were found in the officers and chiefs of the kins. But the state of insecurity then prevailing required an office whose incumbent should be in constant charge of the military affairs of the tribe. This was plainly within the scope of tribal society; such functions had already been exercised previously, in times of particular need. Now, under the pressure of circumstances, and with a permanent settlement, permanence of the charge became a necessity.⁴⁷

the seven chiefs "which seven went for leaders of each quarter" (p. 223). The wizards reply (among other things): "Great and powerful Lady (?) we have neither seen, nor spoken to, the chiefs of the *calpules*." Judging from this, the original number of them was *ten*, and it is presumable that if such was the case they were the *war-chiefs*, whereas the others were more properly the administrative officers analogous to the "*sachems*" of the Iroquois. (Compare *Morgnn*, "*Ancient Society*," Part II, cap. II, pp. 71, 72, and 73. Cap. IV, p. 114. Cap. V, pp. 129, 130, etc., etc., to 148). We shall have occasion to return to this again in a subsequent note.

⁴⁶ The office of "Cihuacohuatl" is very old. *Iztillzochitl* ("*Relaciones*" "*Segunda Relacion*," pp. 323 and 324), after speaking of the seven leaders of the Tolteca, mentions "Zihuecatl" tambien uno de los cinco capitanes inferiores" as discoverer of Jalisco. Confirmed (the last mention excepted) by *Torquemada* (Lib. I, cap. XIV, p. 37). *Veytia* (Lib. I, cap. XXII, p. 220). The "*Codex Mendoza*" (Plate II in Vol. I of Lord Kingsborough), represents the first regular head-war-chief of the Mexicans, "Handful of Reeds" (Acamapichtli) with a head and face of a woman and snake surmounting his own head or rather the forehead, whereas the "name" proper stands, as usual, behind the occiput. The explanatory note thereto (Vol. VI, p. 8), says: "The first figure probably denotes that Acamapichtli, before he was elected king, possessed the title of Cihuacohuatl, or supreme governor of the Mexicans; when Mexico afterwards became a Monarchy this title was retained."

⁴⁷ *Durán* (Cap. V, pp. 43 and 44). *Acosta* (Lib. III, cap. 8, p. 468). *Herrera* (Dec. III, lib. II, cap. XII, p. 62). *Torquemada* (Lib. II, cap. XIII, p. 26). "The cause of his election was the increase in numbers, and their being surrounded by enemies who made war upon them and damaged them." "La causa de su eleccion, fue, aver crecido en numero, y estar mui rodeados de Enemigos, que les hacian guerra, y afligian."

Therefore, near the eighth decade of the fourteenth century, or about thirty years after the settlement of Mexico, the office of "chief of men" (Tlacatecuhtli) appears to have been established.⁴⁸ This is commonly heralded as the creation of monarchy, thus abolishing the basis of organization, or tribal society itself. It is however overlooked that only an office was created, and not a hereditary dignity with power to rule.⁴⁹ Its first incumbent, "Handful of Reeds" (Acamapichtli), was duly elected, and so were his successors.⁵⁰ We have already seen that the Mexican family itself was so imperfectly constituted as to preclude the notion of a dynasty, and it was therefore, as we shall further establish, to the "kin" that the so-called succession or rather the choice was limited.⁵¹ We do not know, nor would it be safe to guess, *which*

Veytia (Lib. II, cap. XVIII, p. 159; cap. XXI, pp. 186 and 187). *Clavigero* (Lib. III, cap. I, pp. 190 and 191). It was a military measure.

⁴⁸ The dates are variously given. *Durán* (Cap. VI, p. 53), says 1364, or rather he states that "Handful of Reeds" died at the age of 60, and that his death occurred 1404. He had been elected when 20 years old, therefore forty years previous to the latter date, or in 1364, A. D. *Felancourt* (Parte IIa, trat. I, cap. XI, p. 270), says 3d of May, 1361, or 1368. According to *Sahagún*, and from his lists of Mexican "Kings" (Lib. VIII, cap. I, pp. 268-271), it would be about 1369, but (Lib. VIII, cap. V, p. 280), he says he was elected in 1384. *Veytia* (quoting also *Carlos de Sigüenza*), says (Lib. II, cap. XXI, pp. 186 and 188), 1361. *Clavigero* (Lib. III, cap. I, p. 190. Appendix to 1st Vol., p. 568. Vol. II, Sec'd Dissertation, Cap. II, p. 327), says 1352. *Méndez* (Lib. II, cap. XXXIV, p. 148), 1375. In the "*Real Ejecutoria*" (Col. de Doc., Vol. II, p. 9), a date 1384 appears, but this date is of doubtful origin. The "*Codex Telleriano-Remensis*" (Vol. I, Kingsb., Plate I, and Explanation, Vol. VI, p. 134), says in the year 11. cane, ("Acatl") or 1399. *H. H. Bancroft* (Vol. V, cap. VI, p. 358), 1350. *Prof. Valentini* ("The Mexican Calendar-Stone," p. 108), 13, Acatl, or 1375.

In regard to the title of "Tlacatecuhtli" compare "*Art of War*," (p. 123, note 104). There is a singular analogy between it and the title of "*Great War Soldier*," given by the Iroquois confederacy to its head-war-chiefs ("*Ancient Society*," p. 146). Under "men" the Mexicans also understood "braves." Therefore "chief of the braves" also.

⁴⁹ In a general way, the following passages are interesting. *Durán* (Cap. LXIV, p. 498), "because in these times the brothers, sons of the King inherited one another, although from what I have noted of this history, there was no heredity nor succession, but that only those which the electors chose, whether brother or son, nephew or cousin, in the second degree, of him who died, and this order it strikes me they carried (on) in all their elections, and so I believe that many of those who clamor and pray for lordships ("señorios") because of their fathers having been Kings and Lords at the time of their infidelity do not, as I understand, justly claim ("no piden justicia"). For according to their ancient law there were rather elections than successions and inheritances, in all kinds of lordships." I shall give the full text of this very important passage further on. *Torquemada* (Lib. XI, cap. XXVII, p. 358). "Of the Mexican republic I confess this manner of succession, and that sometimes they were elected without regard to anything save their personal qualification."

⁵⁰ *Sahagún* (Lib. VIII, cap. XXX, p. 318).

⁵¹ Compare *Durán* (Cap. LXIV, pp. 498 and 499). *Torquemada* (Lib. XI, cap. XXVII, p. 358). The former says in what is quoted in note 49. "In all the other lordship I only found but elections and the will of the electors, and thus they never could fail to have a King of that lineage, even to the end of the world, because if to-

was the particular "calpulli" of Mexico who furnished the Mexican head-war-chiefs down to 1520 A. D.

Analogous to the New Mexican pueblo, the tribe of Mexico had, from that time on, its supreme council and finally two executive head-chiefs; for with the creation of the military office of "chief of men," the "Snake-woman" rose correspondingly in importance.⁵² No change in that organization took place until the Spanish conquest although within the period of nearly one hundred and fifty years (approximately) thus indicated, we find, at three distinct epochs, mention of virtual changes or subversions of the aboriginal institutions of the Mexican tribe.

The first one of these critical dates agrees with the third decade of the fifteenth century, or the time when, through a well executed dash, the Mexicans overthrew the power of the Tecpanecas on the mainland.

This successful move, perhaps originally conceived in self-defence, finally brought about the confederacy of the "nahuatl" tribes of Mexico, Tezcuco, and of Tlacopan. We have nothing to add to our first picture of this military partnership, as drawn in "Tenure of Lands."⁵³ Still the event deserves special men-

day they elected the brother, to-morrow they elected the "grandson, and the day after the nephew, and thus they went through the whole lineage without any end." This is a plain description of the succession of office in the kin. Torquemada is about equally explicit, and this agreement between two authors who represent antagonistic tribal traditions, is certainly of great weight. To this should be added the statement of *Sahagun* (Vol. II, p. 818), "and (they) selected one of the most noble ones of the lineage ("linea") of the lords post." Even the series of contradictions of *Zurita* ("Rapport, etc.," pp. 12-20), contain a plain description (if attentively studied) of succession in the kin, and not in the family.

⁵² At the time Francisco Vasquez de Coronado reached and conquered New Mexico, its sedentary Indians were governed by a council of old men, and besides they had governors and captains. This is explicitly stated by *Pedro de Castañeda y Nagera*, ("Relation du Voyage de Cibola, entreprise en 1540,"), who went with Coronado in 1540, in the French translation by Mr. Ternaux-Compans, 1838 (Cap. XI, p. 61), about Tuscayan Cibola, although flatly contradicted again by himself (Part. II, cap. III, p. 104), in regard to Cibola. *Torquemada* (Lib. IV, cap. XL, p. 681), mentions the "mandón" (commander) and after him what he calls a "crier" "y despues de él, es el que pregona, y avisa las cosas, que son de Republica, y que se han de hacer en el Pueblo." The same author is also very explicit (Lib. XI, cap. XVII, p. 337), when he distinctly states: "El Gobierno de los del Nuevo-Mexico parece de Senado, ú de Señoría," mentioning also the two other officers.

For the actually prevailing governmental system of the New-Mexican Pueblos the sources are very numerous. I simply refer to *H. H. Bancroft* (Vol. I, pp. 546 and 547), *W. W. H. Davis* ("The Spanish Conquest of New-Mexico," 1893, p. 415, note 4), *Oscar Loew* ("Lieutenant G. M. Wheeler's Zweite Expedition nach New-Mexiko und Colorado, 1874," in *Petermann's "Geographische Mittheilungen,"* Vol. 22, p. 212). All the other main sources it would be useless to enumerate.

⁵³ Pp. 416, 417, and 418, and notes 61 to 70 inclusive. Also note 4 of this paper. In re-

tion here, because of its unveiling, so to say, the full organization of the ancient Mexicans as they preserved it until the time of their downfall.

Upon the occasion of the division of spoils gathered from the defeated Tecpanecas, and of the establishment of regular tribute, there appear the following war captains and leaders of the Mexicans, as representatives of the latter's organization.

The "chief of men."

Four captains of the four principal quarters of Mexico.

Twenty war-chiefs of as many kins composing the tribe.

One chief representing the element of worship, or "medicine."

The "Snake-woman."⁵⁴

gard to the date of its occurrence, *Bancroft* (Vol. V, p. 395), says about, or immediately after, 1431, following Brasseur de Bourbourg, *Clavigero* (Lib. IV, cap. III, p. 251), 1426, *Ixtlilxochitl* ("Hist. Chichimeca," Cap. XXXII, p. 217), also 1431, *Feyta* (Lib. III, cap. III, p. 165) 1431, The "*Codex Telleriano-Remensis*" (Kingsb., Vol. I, p. 7, and Vol. VI, p. 136), has it 7, "Tochtli" or 1404.

⁵⁴ *Durán* (Cap. XI, p. 96). Besides distributing land "juntamente con daros y repartiros las tierras que avels ganado, para que tengais renta para el sustento de vuestros estados y personas segun el mérito dellas," he gave them "ditados" or titles "y (quiere) haceros señores de título" (the latter would be to make them noblemen). I must advert here that "ditado o título de honra" is expressed in the Mexican language by "tecuoyotl" "tlatocazotl" "maniotl" (*Molina*, "*Vocabulario*," Part I, p. 46). These words however mean but, respectively "chieftainship," "speakership," and "honor." (the latter see *Molina* II, p. 54). all of them terms which, as we shall hereafter see, apply to *personal merit*, and not to hereditary privilege among the Mexican aborigines. *Durán* then proceeds (p. 97) to give these titles as follows:—

"Primeramente a su general dió por ditado			<i>Tlacochcalcatltecutli.</i>
A Vene Motencuuma,	Tlacacileltzin dió por ditado		<i>Tlacatecatl.</i>
A Tlacauapan,	d. p. d.		<i>Ezunuacatl.</i>
A Cuatlecoatl,	d. p. d.		<i>Tlillancalqui.</i>
A Venuepacan,	d. p. d.		<i>Tezcaconacatl.</i>
A Aztacoatl,	d. p. d.		<i>Tocuiltecatl.</i>
A Caualtzin,	d. p. d.		<i>Acolnuacatl.</i>
A Tzonpantzin,	d. p. d.		<i>Hueitecutli.</i>
A Epcotiuatzin,	d. p. d.		<i>Temillotzin.</i>
A Citlalcoatzin,	d. p. d.		<i>Tecpanecatl.</i>
A Tlaneloc,	d. p. d.		<i>Calmimelolcatl.</i>
A Ixcueltlatoc,	d. p. d.		<i>Mexicaltecutli.</i>
A Cnauhtzitzimilt,	d. p. d.		<i>Huitznauatl.</i>
A Xiconoc,	d. p. d.	y renombre,	<i>Tepanccaltecutli.</i>
A Tlazoltéotl,	d. p. d.		<i>Quezalcoatl.</i>
A Axleyotzin,	d. p. d.		<i>Teuctlamacazqui.</i>
A Ixauatlilloc,	d. p. d.		<i>Tlopottecatl.</i>
A Mecantzin,	d. p. d.		<i>Cuauhynauacatl.</i>
A Tenamaztli,	d. p. d.		<i>Coatecatl.</i>
A Tzontemoc,	d. p. d.		<i>Pantecatl.</i>
A Tlacacochtoc,	d. p. d.		<i>Huecamecatl.</i>

To these he adds (pp. 98 and 99), five more, namely: *Quauhnochtecutli*, *Cuauhqui-uacatl*, *Yopitcaltecutli*, *Cuitznauatl*, and *Itcotecatl*. The three last were from Culhuacan. Adding to this the "chief of men" himself, who was "Flint-Snake," or

The existence of *twenty* autonomous consanguine groups is thus revealed, and we find them again at the time of the conquest,

"Obsidian-Snake" (*Itzcuhuatl*), we have twenty-five chiefs in all. Now we cannot fail to notice:—

- (1). "Itzcuhuatl," the "chief of men" or head-war-chief.
- (2). "Tlacochealcatl," "Tlacoatecatl," "Exhuahuacatl," and "Cuauhnochtli," the four military leaders of the four great quarters ("phratries") of Tenuchtitlan. (See "*Art of War*," pp. 120, 121, and 122, also notes 97 to 101 inclusive.)
- (3). "Thillancalqui"—"Man of the black-house," a chief connected with "medicine" or worship, as I shall hereafter show. He was rather a counsellor or advisor, than a captain, as *Acosta* (Lib. VI, cap. XXV, p. 441), and *Herrera* (Dec. III, lib. II, cap. XIX, p. 75) positively state, whereas *Durán* (Cap. XI, p. 101) asserts the religious origin of his office.
- (4). "Tlaccallel," who, as *Durán* and *Tezozomoc* both repeatedly and plainly assert, was the snake-woman or "Chhuacohuatl." In this instance, however, he is graced with the title of "man of the house of darts" ("Tlacochealcatl"), and thus made one of the four leaders of the "phratries." This is an evident mistake, as the latter title belonged to Montezuma (the first, or "old one"). Compare *Torquemada* (Lib. II, cap. XXXVI, p. 140; cap. XLIII, p. 190, where he is called "captain-general"), *Vetancurt* (Part II, Trat. I, cap. XV, p. 225), also *Durán* (Lam. 8a, Parte Ia).
- (5). Twenty war-chiefs, each one of whom commanded the warriors of one kin or calpulli, hence they were the military leaders of twenty Mexican kins. Besides the indications to that effect furnished by *Durán* (Cap. XXVII, p. 224), "A los señores de los *culpules* no los vimos ni nos hablaron," said the sorcerers which had been sent to Huitzilopochtli's mother, after she had asked them about the chiefs or captains, seven in number, which had led the Mexicans originally, (see note 33). *Tezozomoc* ("Crónica," Cap. XV, pp. 24 and 25), while corroborating the statements of *Durán* (with the exception that he omits the chief "Mexicatltecutili," and thus gives only twenty-seven chieftains), inserts the following explanation about these twenty (or twenty-one after *Durán*) captains: "After these four (the four first ones), go the Tlacanes, called valorous soldiers, surnamed captains." The "Tlacan" or "tlacanh," properly "teachcauhlin." *Elder brother*, was the military chief of each "barrio" or "calpulli," therefore of each kin ("*Art of War*," p. 119, notes 91, 92, and 93), consequently these twenty chieftains represent here as many consanguine relationships composing the tribe of the ancient Mexicans.

It will be noticed, however, that *Durán* has twenty-one chiefs, whereas we assume but twenty, according to *Tezozomoc*. The latter omits "Mexicatltecutili" and, perhaps properly too. This word signifies but "Mexican chief," in general, and cannot therefore well be the title of one particular leader. It recurs occasionally in the course of Mexican history. Still, this is only a suggestion on my part, for the matter is far from being proven. *Torquemada* (Lib. IV, cap. CII, p. 571) mentions "*Mexicatl-achcauhlin*" among the chiefs who went with Quauhtemotzín before Cortés on the day after the resistance of the Mexicans had ended. Again *Tezozomoc* mentions two chiefs of the same title "Cuauhquiuacatl," as also does *Durán*. Now this would be impossible, since *Tezozomoc* calls the second one of that name, a son of "Cuauhnochtli." It may be now that the latter author has omitted the "Mexicatltecutili," and that "Cuauhquiuacatl" is to be counted but once. It results from the statements of *Vetancurt* already alluded to, that there were twenty Mexican "calpulli," consequently there were but twenty leaders of kins. The analogy between these "barrios" and the chiefs of *Durán* and *Tezozomoc* is greatly increased by the fact that for the three chiefs of Culhuacan mentioned by the latter, we have also three barrios of "Otomites," therefore, in each case but seventeen original kins of Mexicans proper (*Vetancurt* "*Crónica*," Vol. III, p. 132).

while their last vestiges were perpetuated until after 1690, when Fray Augustin de Vetancurt mentions four chief quarters with their original Indian names, comprising and subdivided into *twenty* "barrios." Now the Spanish word "Barrio" is equivalent to the Mexican term "calpulli." Both indicate the kin, localized and settled with the view to permanence.⁵⁵

What is often conceived as the establishment of a vast feudal monarchy at the time just treated of, resolves itself therefore into two very plain features. One of these consists in the establishment of the confederacy, the other is but the appearance in broad daylight of the peculiar organization of aboriginal society among the Mexicans. Thus we have no sudden change of base, no revolution in the institutions of the tribe; the only progress achieved consisted in the extension of inter-tribal relations and in their assuming the shape of a military partnership.

The year 1478 witnessed another event which seemed to affect

All these titles were permanent, though not hereditary, as it is plainly seen in the case of the four leaders of the four "phratries" about which *Sahagun* says: (Lib. VIII, cap. XXX, p. 318) "The chief elected, forthwith they elected others four which were like senators that always had to be by his side . . . (these four had different names in different places) . . ." *Durán* (Cap. XI, p. 103). "To these four lords and titularies, after they were elected princes, they made them of the royal council, like presidents and members ("oydores") of the supreme council, without whose opinion nothing should be done. When the king died, his successor had to be taken from those, neither could any others but brothers or sons of kings be clothed with these dignities. Thus if one of these was elected, they put another in his place. We must know that they never put a son of him who had been elected ("King") or of the deceased, since, as it has been said, the sons never succeeded (in office) by inheritance, to the titles or lordships, but through election. Therefore, whether son, brother, or cousin, if elected by the king and those of his council, to that dignity, it was given to him,—it being sufficient his being of that lineage and near relative, and so the sons and brothers went on inheriting gradually, little by little . . . and the title and lordship never went outside of that descendancy ("generation" also kin), being filled by election, little by little."

The other titles are frequently met with up to the time of the conquest, as a few instances will abundantly prove. Assuming, with the majority of authors, the date of 1481, for that of the formation of the confederacy, we meet, during the unlucky foray of the confederates against Michhuacan, about fifty years later, with the following war-chiefs of the Mexicans. Tezacoatl, Huitznahuatl, and Quetzalcatl (*Tezozomoc*, Cap. LII, pp. 84 and 85), also Coatecatl (Cuauhtecatli). At the time of Cortés' first arrival off the coast (1518) we meet in the council of Mexico with Huitznahuatl, Hueycoamecatl (*Torquemada*, Lib. IV, cap. XIII, p. 879). Finally when, after the resistance of the Mexicans had ceased, Cortés assembled all the chiefs in his presence, we again meet with Huitznahuatl, Mexicatitcuhlli, Teuctlamacazqui (*Torquemada*, Lib. IV, cap. CII, p. 871). Evidence of this kind could be produced in profusion, but it would only increase unnecessarily the size of this annotation. Compare the titles of the Iroquois sachemships in *Morgan* ("Ancient Society," Part II, Cap. V, pp. 180 and 181).

⁵⁵ Compare note 33. Also *Molina* (Parte I, p. 18), and others.

the Mexican tribe in a more direct manner. It was the overthrow and capture, after a short but bloody struggle, of the pueblo of Tlatilulco.⁵⁶ Owing to the close connection of the latter with the Mexicans both had remained on a non-hostile footing; for the suspicious watchfulness with which each viewed the other did not comport with any more intimate relations, those of trade and exchange excepted. When the confederacy came into existence, Tlatilulco was counted in as a part of Mexico, since its people acknowledged themselves to be Mexicans; but there is no evidence authorizing the conclusion that the Tlatilulca played any other role, beyond that of auxiliaries to their kindred of Tenuchtitlan.⁵⁷ The rash attempt of the former at the organization of a conspiracy to become "Mexico alone" terminated fatally; their place was taken and barbarously sacked, their leaders were killed in the fray or sacrificed afterwards, and the Mexicans, exasperated at the conduct of their treacherous kinsmen treated them in an unusually severe manner. We have seen already that, in any conquest, the conquered tribe, if not exterminated, was only subjected to more or less heavy tribute. But the Tlatilulca were dealt with far worse: they were degraded to the rank of "women," their public market was ordered closed, their council-house left to decay and their young men, expressly debarred from the privilege of carrying arms in aid of the Mexicans, were required to become the carriers of supplies to their captors. Such a punishment was unknown in the annals of Indian conquest, and appears even to militate against our views of aboriginal society in Mexico; still it was in perfect harmony with the institutions of the latter. The Tlatilulca were, as we should never forget, not only a tribe

⁵⁶ The "*Codex Telleriano-Remensis*" (Plate XIV, also explanation Vol. VI, p. 138), concurs in this date, or the year seven "calli" which is indeed 1473.

⁵⁷ This acknowledgment—"to be Mexicans"—on the part of the inhabitants of Tlatilulco, was in the nature of a *claim*, and with a spirit of jealousy and envy. Although Durán says (Cap. XXXII, p. 257), "auliendo estado hasta entonces sujetos a la corona real de Méjico," this affirmation is utterly disproven, not only by all the other sources, but by his own statements (Cap. V, pp. 43 and 46). The confused and contradictory tales about the state of war preceding the formation of the confederacy still make the Tlatilulca always appear as assisting their neighbors of Tenuchtitlan, more or less. Sometimes they were neutral only, and at times they may have felt inclined to foster attempts at destruction of their rivals by outsiders, but they still were afraid of the consequences of it for their own independence. Durán (Cap. V, p. 46). The singular statement that the Tlatilulca even attempted, though fruitlessly, to withdraw the Tezcucans and Tlacopans from Tenuchtitlan, inducing them to become their associates in the work of its overthrow, is significant. See *Torguemada* (Lib. II, cap. LVIII, p. 178) "Quisoose aliar con los de Tlacupa, y Tezcucuo, los quales no le acudieron."

connected, through stock-language or even dialect, with the Mexicans, but they were actually "kin of their own kin." Their punishment therefore was that of a crime committed against kinship and tribe. As we shall hereafter attempt to show, such delicts entailed death. Instead of exterminating a whole settlement however, the Mexicans treated the survivors as *outcasts from the bond of kinship*, degrading them to manual, therefore female labor.⁵⁸

⁵⁸ The descriptions of the capture of Tlatilulco by the Mexicans, while "Face in the Water" (Axayacatl) was the latter's head war-chief, are so numerous, and in their features as far as the subject of this paper is concerned, so generally concordant, that I may be permitted to forego quotations. I simply refer to the best known authors on ancient Mexico in general. Still these authors seem to report but the "Tenuchcan" side of the story. Although *Boturini* ("Idea" "Catalogo del Museo Indiano," p. 23), mentions the copy of "Un Mapa en papel Europeo, donde estan pintados los Reyes de Tlatilulco, y de México" as the only specifically "Tlatilulcan" document of which he knows, there still is preserved to us a tale of the overthrow of the pueblo of Tlatilulco, which bears distinctly the stamp of a genuine Tlatilulcan version. We owe it to *Oviedo y Valdez* ("Historia general y nat. de Indias," Lib. XXXIII, cap. XLVI, pp. 504 and 506). "Avia dos parcialidades ó bandos en aquella república, la una se decia Mexicanos, é la otra Tlateulcos, como se dice en Castilla Onequinos é Gambolinos, ó Giles é Negretes. Y estos dos apellidos tuvieron grandes diferencias: é Montecuma, como era muioso, fingió grande amistad con el señor principal del bando Tlateulco, que se decia por sus nombre proprio Samalce, é tomóle por yerno, é dióle una su hija, por le asegurar. Con este debdo, en cierta fiesta é convite á este Samalce, é á todos sus capitanes é parientes é hombres principales, hizolos embeodrar: é desque estuvieron bien tomados del vino, hizolos atar é sacrificarlos á todos, sacándoles los corazones vivos, como lo tienen por costumbre. E los que padescieron esta crueldad passaban de mil hombres, señores principales; é tomólas las casas é quanto tenían, é poblólas de sus amigos é de los de la otra parcialidad Mexicana. É á todos los que tuvo por sospechosos, desterrólos de la ciudad, que fueron mas de quatro mil hombres; y en los bienes é moradas destos hizo que viviesen los quel quiso enriquecer con bienes agenos. É aquellos que desterró, hizo que poblassen quatro leguas de alli, en un pueblo que de aquella gente se hizo, que se llama Mezquique, é que le sirvirassen de perpétuos esclavos. É así como la ciudad se decia, y es su proprio nombre Temistitan, se llamó é llama por muchos México dende aquella malicia cometida por Montecuma." This story is repeated by him with less detail (Cap. I, p. 533). Although manifestly incorrect, it is still interesting to compare with the current version.

The punishment which the Tlatilulca received, is also mentioned by a number of authors. The prominent sources, however, are: *Durán* (Cap. XXXIV, pp. 270 and 271), *Tezozomoc* (Cap. XLVI, pp. 74 and 75). Both of these relate that, besides, the great market place of Tlatilulco about which the latter says: "that the tianguis (market) was esteemed beyond, as if they had gained five tribes." The Tlatilulca were, as we shall hereafter see, mostly traders and, as one of their old men is made to say to "Face in the Water," by *Tezozomoc* (p. 74): "We are traders, merchants, and will give you (follows a long list of articles promised) . . . since by force of arms this tianguis has been gained." *Durán*, (p. 270): "After this was done, the King commanded that this place and market which they had gained should be distributed among the lords, since the Tlatilulca had no other soil." Compare also the statements in regard to trading and bartering in aboriginal Mexico, and to the beginning of the traders at Tlatilulco, in *Sahagún* (Lib. IX, cap. I, pp. 335 and 340).

"Kin of their own kin." In regard to this statement I beg to refer to one made by *Veytia* (Lib. II, cap. XV, p. 135): "Some modern national writers say that this separation did not occur precisely as between nobles and plebeians, but that eight families

Still, this low condition did not remain forever. The Tlatilulca were in a measure "re-adopted" into the tribe. After this, they formed a fifth quarter, or "phratry," which Father Vetancurt (in 1690) mentions as containing six "parcialidades." But this rehabilitation never extinguished the fire of revenge kindled once among the Tlatilulca towards the Mexicans. The latter treated the former therefore, not as a tribe subject to tribute, but as a suspicious group, to which the rights and privileges resulting from consanguinity could not well be denied, but to which voice and vote in the leading councils should not be accorded. In this singular position, not strictly inferior, but evidently more "distant," we find the Tlatilulca at Mexico at the time of the conquest.⁵⁹

or tribes, in which there were of both kinds, were those who divided themselves from the rest." (See note 44.) It is much to be regretted that the eminent Mexican scholar has not given us the names of these "Algunos escritores nacionales modernos."

⁵⁹ According to *Durán* (Cap. XXXIV, p. 371), they remained in a degraded condition for 180 days at least, or eight aboriginal months: "y que les turase esta penitencia y castigo hasta los ochenta días del segundo tributo." But they were, according to him, relieved of it but conditionally: "y así les quitauan aquellos entredichos que se contado, los quales, en saltándose, eran tornados a poner." In order to comply with the demands of the Mexicans for slaves, the Tlatilulca were forced to carry arms again, so as to take part in the wars. *Tezozomoc* (Cap. XLVI, p. 75) confirms, but implies previously (p. 75) that the Tlatilulca were specially obligated to be the traders for Mexico: "y haveis de ser nuestros tratantes y mercadres en los tianguls de Huexotzinco, Tlaxcalan, Tlilincuitepec, Zacatlan, y Cholula." A similar punishment was meted out to them by "Stern chief" the younger (the last Montezuma), after an unsuccessful campaign against Huexotzinco, Cholula, and Atlixco. *Durán* (Cap. LIX, pp. 468, 469), *Tezozomoc* (Cap. XCVI, p. 170). It is, besides, positively asserted by the former (p. 271) that the "medicine lodge," or temple of Tlatilulco, was closed thereafter, abandoned and left to ruin and decay ("y así dice la ystoria que estuvo hasta entonces lleno de yerba y de vasura y caidas las paredes y dormitorios del"). It is, of course, confirmed by *Tezozomoc* (p. 75, cap. XLVI): "y así fué que lo estiuvo muchos años hasta la venida que hizo Don Fernando Cortés, Marquis del Valle, en esta nueva España, como adelante se dirá, a que me refiere." It is somewhat difficult to reconcile these statements with those of *Bernal Díaz de Castillo* (Cap. XCII, pp. 88, 89, 90, 91, *Veda*, Vol. II), and of *Sr. Ionsbalceta* in *Cervantes-Salazar* ("Tres Dialogos," note 40 to 3d Dial., p. 201) to the effect that Cortés visited that temple of Tlatilulco and found "Stern chief" worshipping in it, and still more difficult is it to reconcile the relation of *Bernal Díaz* with that of *Andrés de Tapia* ("Relacion, etc., etc.," pp. 582-583, Col. de Doc. II), who, as an eye-witness too, deserves similar credit.

Tlatilulco formed a quarter, a fifth great one, of Mexico at the time of the conquest. This is distinctly stated by *Motolinia* (*Historia, etc.*, Trat. III, cap. VII, pp. 180 and 181), *Terquemada* (Lib. II, cap. XI, p. 93) confirms *Motolinia* in general, (Lib. III, cap. XXIV, p. 295), *Mendieta* (Lib. III, cap. II, p. 182), "en el barrio llamado Tlatelulco;" (Lib. IV, cap. XV, p. 414), "y el barrio se dice Tlatelulco," adding (p. 418) "que son del mismo pueblo de Tlatelulco;" (Cap. XVII, p. 493), "El convento de Santiago de Tlatelulco que es como barrio de Mexico;" (Cap. XXVIII, p. 495), "pueblo de Tlatelulco;" (Id., p. 483, Cap. XXXIX). That this fifth great quarter was again divided into six smaller ones, is proven by *Vetancourt* ("Crónica, etc.," pp. 207 and 313): "Tiene cuatro religiosos que con el ministro colado administran a más de mil quinientas personas en

This incident in Mexican history does not exhibit any features different from those found at the basis of tribal society, and it is not until the first decade of the sixteenth century that we are referred to the period when aboriginal institutions of ancient Mexico emerged from their former condition into that of political society proper and exhibited the features of rule as despotic as any on the three eastern continents. Even Robertson has so far yielded to this preconceived idea as to write, "This appearance of inconsistency has arisen from inattention to the innovations of Montezuma upon the Mexican policy. His aspiring ambition subverted the original system of government, and introduced a pure despotism. He disregarded the ancient laws, violated the privileges held most sacred, and reduced his subjects of every order to the level of slaves."⁶⁰ In general, many deeds, creditable and disreputable, are charged to that ill-starred "chief of men" of the Mexican tribe, whose tragical death has furnished a welcome topic to the most brilliant writers. "Wrathy chief" (Motecuzumah or Montezuma) was however innocent of many or of the most, if

seis parcialidades, que cada cual tiene sus barrios." This is indefinite and vague, and we are still left in doubt as to whether there were only six or whether there were more. The words "each of which has its quarters" would indicate that each of these "parcialidades" was divided into smaller ones. Still, "parcialidad" and "barrio" are regarded as equivalent terms, and both signify *kíns*. The history of the capture of the Mexican pueblo has, in some details of the siege, preserved to us the names of some aboriginal "barrios" of Tlatilulco. *Vetancurt* (Vol. II, Part. III, Trat. II, cap. VII, p. 194) mentions two of them: "Yocacoolco" (with the ermita of Santa Ana) and "Amazac" (ermita of Santa Lucia), the latter of which is again named (Cap. X, p. 206) by him, and by *Torquemada* also. *Torquemada* gives a number of names even: Nonohualco (Lib. IV, cap. XCIII, pp. 551, 552), Yacoccalco (p. 552), Tlacuchcalco (p. 552), Amazac, Coyonacazco (p. 552). This gives the names of five barrios of Tlatilulco. If to this we add "el Barrio, que se llama Xocotitlan, que es agora San Francisco, que por otro nombre se llama Cihuateopan," (p. 552), we would have the sixth quarter also.

That the administration of Tlatilulco remained separate from that of Tenuchtitlan is proven by the fact that Montezuma was assisted by twenty chiefs corresponding to the twenty *kíns* of the *Tenuchcas* only, and without representation for the Tlatilulca. See *Bernal Díez de Castillo* (Cap. XCV, p. 95. *Vedlia* II). But the war-chief of Tlatilulco was present at the council. Thus "Itzquauhtin" is frequently mentioned as the companion of Montezuma. *Sahagun* (Lib. XII, cap. XVI, p. 24; cap. XVII, p. 25; cap. XXI, p. 28; cap. XXIII, p. 31). *Torquemada* (Lib. IV, cap. LXX, pp. 498, 499). *Vetancurt* (Vol. II, cap. XV, Parte III, p. 182). *Clavigero* (Vol. II, Lib. IX, cap. XIX, p. 153).

Of the hatred between Mexicans proper and Tlatilulca the last days of the siege of Mexico furnish numerous instances. Both *Torquemada* (Lib. IV, cap. XCII, p. 550) and *Vetancurt* (Parte III, cap. VI of 2d Trat., p. 193) mention the flight of the former into Tlatilulco as taking refuge among enemies. Finally the following passage is sufficiently plain: *Durán* (Cap. XXXIV, p. 271), "E fué tanta la pertinacia de los Mexicanos, que hasta que los españoles vinieron a la tierra no les dejaron tornar a libertad ninguna, ni a tener templo particular."

⁶⁰ "History of America," (9th Edition, 1800, Vol. III, Book VII, p. 291).

not all, of these good or bad actions, and this simply for the reason that he had not the power to commit them. Thus he is charged with remodelling his household, removing certain assistants, and filling the vacancies with "scions of noble stock," creating, at the same time, hereditary charges. It may be that, in the case of simple runners for instance, the "chief of men" held ample authority to select his men, consequently to remove them; but it is certain that for any office of permanence with the kin or tribe, he had not the least discretionary power. How insignificant his influence even was, when severed from organized tribal government, is amply shown by his utter helplessness from the very moment that the Spaniards had *once* treated him as a fettered captive.⁶¹

⁶¹ The name is variously written "Mutluma," "Mutezuma," "Moctezuma," "Montezuma," "Mochtezuma," "Motecuhzoma;" and "Señor severo," is the most current interpretation. On the tables of *Durán* (Trat. I. Lib. 7, 8, 9, 21, 22, 23, 26) and in general, the "name" is painted as the head-dress ("Xiuhhuitzotli") of a chieftain, transpierced by an arrow. The etymology may be: "mo"—"thine," "tecuhlli"—"chief," and "gumale"—"furious and wrathful" (*Molina*, II, p. 28), therefore "wrathful chief," or "stern chief." Aside from the charges preferred against him by Ixtlilxochitl and his "school" of subverting gradually the basis of the confederacy, Mexican authors accuse him of having revolutionized the institutions of his own tribe. These reports have been beautifully remodelled into classical English by *Mr. Prescott* ("Conquest of Mexico," Book II, cap. VI, pp. 309 and 310). *Mr. H. H. Bancroft* (Vol. V, pp. 457, 472, 474, 475, etc.), is equally careful in reproducing all such tales, or a résumé thereof, in a shape more palatable to refined and impressionable readers.

The substance of these accusations becomes, however, reduced to the following statements, as expressed by *Tezozomoc* (Cap. LXXXIII, pp. 145 and 146): "He said once to Zihuacoatl Tilpotonqui: I have thought it might be well to change the manner in which the chiefs and messengers should be selected and to establish a different way from that introduced under my uncle Ahuitzotl. Let those serving within their lifetime, be dismissed and others put in their places, elected from the four quarters of Moyotlan, Teopan, Aztacualco, and Cuopopan,—which shall be children of chiefs, and shall stay at the huehucalli, or houses of the community, with the chief-steward dwelling near by. Some of the principals of this tribe now have sons, begotten from slaves, now—these are principals, and let them become delegates (ambassadors, messengers, "embajadores"), and not be cast aside for a miserable macehual who because he is Tequihua, Cacahtli, or Cuachic, Otomles, should therefore be set over the principal Mexican chiefs, and the sons of head-chiefs (Kings, "reyes") What I want is to bring forth those children of chieftains, which have been forgotten so long, and that such as held the office under the chief Ahuitzotl and your father Zihuacoatl may return to rest. . . . Zihuacoatl then called together the council: "al palacio comun," and submitted to them this suggestion, "of which they were all satisfied." With this resolution Zihuacoatl went to the chief and said: I do not want them to be of age now, but only ten or twelve years old, that they may be instructed properly, and become skilled in speaking, well disposed, like unto pages to the chieftain. When they had come before Zihuacoatl, as second person of the chief, he made a long speech to them concerning their line of conduct: Every day you shall attend to Huizilopochtli and to the chief, rising early for orations, and doing the same at nightfall, to become expert in the ways of penitence and sacrifice. Then you shall cleanse the temple, and the chief-house, afterwards have it swept before he comes

It is therefore vain to look for any important change in the institutions of the ancient Mexicans even at this third and latest date, which was the last chance, so to say, if any at all, for such

out. Keep your dresses clean and in order, also his own dress and ornaments; his tress, medal, and chain; also every five days his blow-tube and bow, that he may recreate himself with it. Attend to him at meal-time, morning and evening, serving him with cacao, roses, perfumes, with much humility and respect, never looking into his face under pain of death. Take care that the cooking be well done, and that the stewards provide for everything. But, while there you stay, beware, for many women of worth are seen there, and to whose needs you have also to attend,—watch your behavior, for should you attempt anything against them, you and your relations will be driven off, and if you commit any bad action with any of these women, your fathers' houses will be razed, salt strewn over their ruins, and you and your lineage must perish." At the close of this and other (less important) talk it is said: "and in course of time they became so well bred, refined, and instructed, and skilful, that they were of the most prominent chieftains and leading men in this house and court." *Durán* (Cap. LII, pp. 416–422) does not fail to confirm the statements of Tezozomoc, extending, however, the removals to nearly all the offices: "así en el servicio de sus casa y persona, como en el régimen de la provincia y reyno" (p. 417); also excluding illegitimate offspring ("nengun bastardo"), and giving a number of more or less pertinent details. He even asserts that the officers of the kins were removed. In short, he represents it as the introduction of absolute despotism, surrounding at the same time the throne by a powerful nobility. *Acosta* (Lib. VII, cap. 31. p. 505) and *Herrera* (Dec. III, lib. II, cap. XIV, p. 68), "porqué mandó, que no le sirviesen sino nobles, i que la Gente Ilustre estuviere en su Palacio, i exercitase oficios de su Casa, i Corte." *Torquemada* (Lib. II, cap. LIX, p. 186), *Velancurt* (Part II, Trat. I, cap. XIX, p. 328), and others, confirm, although in a more concise style than the first named authors. It is evident that all these authors must have gathered from the same source, which cannot be *Sahagún*, nor *Motolinia*, neither *Mendieta*, nor any of the known conquerors. The story, as told and detailed by *Durán*, presupposes a class of hereditary nobles, already formed and in full vigor, but excluded in part from tenure of office or rather sharing such right of tenure equally with those of the common class. This is distinctly acknowledged by Tezozomoc, and more particularly yet by *Durán* himself: "y mudar todos los que su tío Anitzotl aula puesto y de los que se aula servido, porque muchas dellos eran de baxa suerte y hijos de hombres baxos," p. 417, etc. Now I have proven ("Tenure of Lands, pp. 419, 420, 421, etc., to p. 448) that there was no privileged class based on tenure of the soil. The revolution assumed presupposes that there was, up to the last "wrathful chief," no class of nobles in exclusive possession of the offices, consequently, even if the "chief of men" in question had any inclination or desire to oust the "common people" from their official positions, the main desideratum, namely, the "uncommon" ones wherewith to replace them, and for whose benefit the whole affair was planned, were not on hand. For nobility not based on hereditary ownership, or hereditary command of some kind, is no nobility at all. As far as heredity of office is concerned, *Durán* himself is one of the most powerful witnesses against it (e. g., Cap. LXIV, pp. 496 and 498). If, therefore, "wrathful chief" created a class of privileged office-holders about the year 1503, it must have been very short-lived, for it was certainly out of existence sixteen years later, at the beginning of the Spanish conquest.

The version of Tezozomoc is evidently the correct one, and thus the whole story dwindles down to the selection of certain boys, probably of his own kin, for the special service of the tribal house of government, which took place with the knowledge and consent of the council only. Whether this act, if converted into a custom, might have gradually merged into prevalence of a certain kin over the rest, is another question, which the intervening conquest of Mexico by the Spaniards, has left without decisive answer. About the helplessness of Montezuma while a captive, see authors on the Conquest in general.

a revolution before the advent of Europeans. We are consequently, by this investigation of the history of aboriginal Mexico, justified in claiming the state of its society to be as yet exclusively tribal.

Tribal society presupposes equality of rights among all members of the kins composing the tribe. Hence it follows that "caste" and hereditary rank could not exist, that there could not be any division, among the ancient Mexicans, into higher and lower classes, into "nobles" and "common people," or into hereditary professions or vocations like "priests," "warriors," "merchants," "artisans," and "tillers of the soil." In vindication however of our assertion, which might otherwise appear as too sweeping, we may be permitted here to dwell at some greater length on this particular question.

Nobility is based upon hereditary privilege of some kind. Either it consists in landed property with heritability of title and (at least originally) office, or in a hereditary charge alone, or privilege or power over others transmitted with the blood. While the former has become more usually known and is therefore regarded as characteristic, the latter, always accompanied by "loose wealth" at least, is still found among pastoral nations.⁶² It may even have been the incipient form of the other. Now, among the ancient Mexicans, we have seen that:—

1. The notion of abstract ownership of the soil, in any shape, had not yet arisen.
2. Individuals, whatever might be their position or office, without any exception, had but a right to use certain tracts, and no possessory rights, even, to land were attached to any office or dignity.
3. No office itself, whether of the kin or tribe, was hereditary in any family, since the Mexican family, as such, was yet in but a nascent state.⁶³
4. Furthermore loose property was subject to such diminutions occasioned by the mode of worship,⁶⁴ and especially of burial,⁶⁵

⁶² The Arabs for instance. See *Kremer ("Geschichte der herrschenden Ideen des Islam")*.

⁶³ For these three points see "*Tenure of Lands*" in general, and pp. 447-48 in particular.

⁶⁴ *Motolinia* (Trat. I, cap. IV, p. 31). "Otros trabajaban y adquirían dos ó tres años cuanto podían, para hacer una fiesta al demonio, y en ella no solo gastaban cuanto tenían, mas aun se adeudaban, de manera que tenían que servir y trabajar otro año y aun otros dos para salir de deuda; . . ."

that it could not accumulate so as to exert any influence in the hands and in behalf of any individual or of his immediate relatives.

Consequently, aboriginal Mexico could have neither nobility nor patriciate, and when such a privileged class does not exist, it is useless to seek for another to which the term "unprivileged" or "common" can be applied.

In a future essay we shall attempt to prove that the Mexicans had no hereditary caste of "medicine men" or priests. We have elsewhere shown that there was no caste of warriors.⁶⁶ The mode of Tenure and distribution of the soil precludes all possibility of the existence of a permanent class of "tillers." It yet remains to cast a glance at the so-called artisans, and at the traders or "merchants."

Neither of these two professions were held to personal improvement of their garden lots ("tlamilli") but, like officers, they could have them improved by others under their names and for their benefit.⁶⁷ The statement of Zurita "that a quarter was composed of all kinds of people" ⁶⁸ disposes of the opinion, that such quarters contained each but members *practising a single trade*. Thus there was no geographical agglomeration by professions.⁶⁹ Again, no rule existed enforcing or establishing hereditament in kind of work, or manner of sustenance. The son might embrace, at his choice, his father's occupation, but *nothing*

⁶⁶ Compare the burial rites of the Mexicans as reported by the majority of old sources.

⁶⁷ "Art of War" (p. 98, notes 8, 9, 40). Zurita "Rapport," (p. 48), "Ils étaient tenus seulement au service militaire, pour lequel aucune excuse n'était admise."

⁶⁸ "Tenure of Lands" (p. 426, note 98). Consult the authorities therein quoted.

⁶⁹ "Rapport" (p. 224).

⁷⁰ It is mostly on the authority of *Sahagun* (Lib. IX, vol. II), that the settlement by professional clusters is admitted. *Ixtlilxochitl* ("Histoire des Chichimèques," Cap. XXXVIII, pp. 292 and 293, "Duodécima Relacion," p. 328, Kingsborough, Vol. IX) also says that, at Texcoco, each profession had its own quarter in the pueblo. But an attentive reading of the first author named (Cap. XVIII, p. 392), where he treats of the featherworkers "De los oficiales que labran pluma, que hacen plumajes, y otras cosas de la misma," satisfies us at once of the fact, that the venerable author only refers to worship of certain idols in a certain quarter, and not to compulsory residence therein, of certain kinds of working men. Nowhere does he say that the "Amantecas" were all featherworkers. He mentions a barrio "Amatlan" or "Amanitla." Might it be the "Amannico" of Vetancurt? Compare also *Torquemada* (Lib. VI, cap. XXX, pp. 59 and 60), *Motolinia* (Trat. I, cap. XII, pp. 67 and 68). "El conquistador Anónimo" (Col. de Doc. Vol. I). "Le plazze de i mercati," (pp. 392 and 393), although concerning the markets exclusively. *Herrera* (Dec. III, lib. IV, p. 138, cap. 138), "i estos andaban por los Barrios, porque en ellos havia de toño género de gentes." Copied after Zurita *Vetancurt* (Part II, Trat. I, cap. IV), *Clavigero* (Lib. VII, cap. LI, p. 561).

compelled him to do it.⁷⁰ It is true, that such as formed gold or silver into pleasing or (as viewed from eastern notions of taste) rather striking shapes, enjoyed some particular consideration; but this was not so much in deference to their skill, as to the material upon which they exerted it. Gold ("teo-cuitlatl") and silver ("Iztac-teo-cuitlatl") were regarded as "offal of gods." Thus they became objects of "medicine," and those who wrought them into useful or decorative articles, were near to the "medicine-men" themselves.⁷¹ Furthermore, the manner and method of working was so slow, it relied so exclusively upon that patient disregard of time which characterizes even the manufacture of a simple arrowhead, that no accumulation of wealth could result from it.⁷² Besides, the artisan had, like any other member of the kin, to furnish his share towards the requirements of public

⁷⁰ *Zurita* ("Rapport, etc.," p. 129). "Les chefs inférieurs et les personnes du peuple élevaient aussi leurs enfants avec beaucoup de soin, leur inspiraient l'horreur du vice, leur recommandaient le respect des dieux, les conduisaient aux temples et les faisaient travailler suivant leurs dispositions; cependant, en général, le fils embrassait la profession de son père." *Gomara* ("Conquista, etc.," Vedia, Vol. I, p. 438). "Los pobres enseñaban á sus hijos sus oficios, no porque no tuviesen libertad para mostralles otro, sino porque los aprendiesen sin gastar con ellos." *Carlos María de Bustamante. Tezucoco en los últimos Tiempos de sus antiguos Reyes*, 1828. Parte tercera, (Cap. III, p. 212). "Enseñaban además los oficios á que tenían afición." *Clavigero* (Lib. VII, cap. V, p. 462). "The sons generally learned the trade of their fathers," but they were not bound to do it, and therefore no "caste."

⁷¹ The words are composed of: "Iztac," white object (*Molina* II, p. 49). "Teotl" god (II, p. 101), "Cuitlatl" filth, therefore gold was "offal of God," and silver, "white offal of God."

The working of gold and silver was regarded, by the Mexicans, as an invention of "Quetzalcohuatl." *Sahagun* (Lib. III, cap. III, p. 243). "y los vasallos que tenia eran todos oficiales de artes mecánicas, y diestros para labrar las piedras verdes, que se llaman chalchivites, y tambien para fundir plata, y hacer otras cosas; y estas artes todos tuvieron principio y origen de dicho Quetzalcoatl" (Also Lib. X, cap. XXIX, p. 113, etc.). Theft of gold or precious stones was punished by death through sacrifice. *Clavigero* (Lib. VII, cap. XVII, p. 487). *Vetancurt* (Parte IIa, Trat. I°, p. 484). "*Leyes de los Mexicanos*".

⁷² A very remarkable way of manufacturing their most admired works — those made of feathers — is reported by *Mendieta* (Lib. IV, cap. XII, pp. 405 and 406): "And there is, besides, something else to notice of this featherwork, namely: that if there are twenty artisans, they will undertake jointly the manufacture of one piece ("imagen"), for, dividing among themselves the figure of the image in as many parts as there are of their number, each one takes his piece home and finishes it there. Afterwards they all meet again and put their pieces together, thus finishing the figure in as perfect a manner as if one alone had made the whole." (Copied by *Torquemada*, Lib. XIII, cap. XXXIV, p. 489, and, with slight variations, also by *Vetancurt*, Vol. I, p. 389.) In regard to the manner of working, *Torquemada* (Lib. XIII, cap. XXXIV, p. 487), makes the pertinent remark: "All this they worked (as we have said) with other stones, and with flint; and according to the subtlety of the work, I think they must have spent long time in finishing it." See in general *E. B. Tylor* ("Researches into the Early History of Mankind," Cap. VII, pp. 187 and 188), also *Motolinia* (Trat. I, cap. IV, pp. 31 and 32).

life:⁷³ hence little was left to him beyond his legitimate wants. We see thus, that hardly any chance was given for the formation of a class which, resting upon the kind of occupation, might assume the position of "caste" in the organization of aboriginal Mexican society.

It is repeatedly asserted, and on high authority, that the merchants or traders of Mexico enjoyed particular privileges. We must premise here that merchants, in the sense of venders of other people's manufactures or products (thus living off of the difference between cost and proceeds) were known only in one way.⁷⁴ The name for merchant was "nian who exchanges one

⁷³ That the artisans or mechanics contributed a portion of their wares in the shape of tribute, is amply proven. See for instance, *Oviedo* (Lib. XXXIII, cap. LI, p. 530. Easily misunderstood!) This passage of Oviedo explains the action of "wrathful chief" towards the "jewellers" and "goldsmiths" at the arrival of Cortés, as related by Tezozomoc, Durán, and by Sahagún. See also: *Zurita* ("Rapport, etc.," p. 233). *Sustamante* ("Tezocco, etc.," Parte III, cap. V, p. 232). *Herrera* (Dec. III, lib. IV, cap. XVII, p. 138). *Clavigero* (Lib. VII, cap. XV, p. 480). *Bancroft* (Vol. III, cap. VI, pp. 231 and 232).

⁷⁴ The existence of currency, or of money, in the shape of grains of cacao, T shaped pieces of tin or copper, and quills filled with gold dust is generally admitted. See for instance, *Prescott* ("Conquest of Mexico," Book IV, cap. II, p. 140). *H. H. Bancroft* (Vol. II, cap. XII, pp. 381, 382, and 383). Cacao played, among the ancient Mexicans, the same role as "wampum" did among the northern Indians, for purposes of exchange, but did not go beyond it. In regard to the so-called copper or tin coins, or rather marks or checks, it is well to examine the matter more closely. *Cortés* ("Carta Quarta" in *Vedra I*, p. 111), says very positively that at Tachco, he obtained sundry small pieces of tin like very thin money ("à manera de moneda muy delgada"), which he indeed found to have been used as currency by the natives, ("halló que en dicha provincia, aun en otras, se trataba por moneda"). *Bernal Díaz* (Cap. XCII, p. 80, *Vedra II*) mentions axes of "brass, copper, and tin" ("hachas de latón y cobre y estaño"), bartered at the market place of Tlatelulco, "and before we left this square ("plaza") we met with other travelers, who from what they said, sold gold in grains as they obtained it from the mines, and enclosed in quills of the geese of the land, and so thin ("asi blancos" so white) that the gold might be seen, and by the length and size of the quills they determined how many mantles or "jiquipiles" (bags of 8000 grains) of cacao they were worth, or slaves, or any other things for which they bartered it," ("ó otra qualquier cosa à que lo trocaban"). *Gomara* ("Conquista, etc.," pp. 348 and 349). "But the chief one is cacahuatl, which serves as coin. . . ." "Their buying and selling consists in exchanging one thing for another. . . ." (Id., p. 451). "No tenían moneda, teniendo mucha plata, oro y cobre, y sabiéndolo hundir y labrar, y contratando mucho en ferias y mercados. Su moneda usual y corriente es cacahuatl ó cacao." *Oviedo* (Lib. VIII, cap. XXX, pp. 316, 317. Lib. XXXIII, cap. LI, p. 530) mentions only cacao as currency. *Torquemada* (Lib. XIV, cap. XIV, p. 260). "It was customary at these marts ('en estos mercados') to exchange ('trocar') one thing for another, and even nowadays this is sometimes practised; but everywhere cacao is most commonly used. In other parts they used, besides, some small mantles which they call Patol-quachtili. . . . Elsewhere they used plentifully some copper coins, almost like unto ("de hechura") a Tau T, two or three fingers wide and made of thin plates ("plan-chuela") some thicker, other less thick. Where there was much gold ("donde avia mucho Oro"), small quills filled with it, circulated among the Indians," ("traian unos Canutillos de ello, y andaba entre los indios mucho de esto"). *Alonso Zuazo* ("Carta

thing for another" ("tlanamacani"),⁷⁵ and such was every artisan, since, in the market place of aboriginal Mexico, every artisan bartered his own manufactures for whatever he needed for sub-

al Padre Fray Luis de Figueroa." Santiago de Cuba, 14 Nov., 1531. Col. de Doc. Vol. I, p. 361). "Hay una moneda entre ellos con que venden y compran, que se llama cacahuate, . . ." *Anonymous Conqueror* (p. 380, etc.) mentions Cacao, "e é moneta la plu comune, ma molto incomoda dopo l'oro é l'argento . . ." *Acosta* (Lib. IV, cap. 3, p. 198) "No se halla, que los Indios usassen oro, ni platn, ni metal para moneda, ni para precio de la cosas, usauanio para ornato, como esta dicho." The statement of Torquemada is plain. While it explains the gradual ascent and development of the notion that the Mexicans had an equivalent to money, it clearly proves that only barter and exchange, and no actual buying, took place. The copper-plates which, as Mr. Bancroft justly remarks, "constituted perhaps the nearest approach to coined money," still were not intended even for such a purpose, since they were of varying size and thickness. But the story of the copper or golden "Eagles" given to the Mexican traders as money wherewith to buy, as faithfully reported and gravely discussed by Mr. Bancroft also, deserves some special ventilation. This story is taken from *Sahagun* (Lib. IX, cap. II, p. 342) "y dábales 1600 toldillos, que ellos llaman quauhtli para rescatar." These toldillos they divided into two parts of 800 each. Now Sahagun's editor, Sr. C. M. de Bustamante, very confidently asserts in note a, (p. 342): "Era una moneda que consistía en unos pedazos de cobre cortados en figura de T.—Clavigero, tom. I, pág. 349." The reference to *Clavigero* is for Lib. VII, cap. XXXVI. Now "Toldillo" is derived from "toldár" that is, to shroud or cover, and means merely a cover, and not a piece of metal. Used also for a covered litter or portable chair. Besides, "quauhtli" indeed signifies Eagle, but it is an evident misprint and should read "quachtli," which signifies a mantle or sheet, thus perfectly agreeing both with the "toldillo" and with the "patolquachtli" of Torquemada. The "golden eagles" of Mr. Brasseur are therefore rendered utterly useless.

Anyone reading *Tezozomoc* will see at a glance what a conspicuous part these mantles "Quachtli," (*Molina*, II, p. 84) played in intercourse and barter. According to *Ramírez de Fuenleal* (Letter, etc., Col. de Doc's conc. le México, I, p. 251) they formed to a certain extent the basis of tribute. These cotton-sheets are well described by *Peter Martyr* ("De nouo Orbe," Dec. V., cap. X, p. 230): "Concerning the shape and fashion of their garments, it is ridiculous to behold: they call it a garment, because they cover themselves therewith, but it hath no resemblance with any other garment, of any fashion: it is only a square couering like unto that, which your holiness cast on your shoulders, sometimes in my presence, when you are about to kinbe your head, to preserve your garments, least haire, or any other filth should fall upon them. That couering they cast about their necke, and then knitting two of the four corners under their throats, they lette the couering hang downe, which scarce couereth the bodie as lowe as the legges. Having seen these garments I ceased to wonder, that so great a number of garments was sent to Cortes, as we mentioned before: for they are all of small moment, and many of them take uppe but little roome."

With the absence of money the profession of merchant as one who lives from the profits of his sales, becomes limited almost to what he can gather from outside of his own community, in other words, to what he can import. Their main and almost exclusive business consisted in effecting intercourse between the tribes. At home, every artisan sold or rather exchanged his own wares in the public markets. See *Cortés* ("Carta Segunda," Vedia I, pp. 32 and 33), *Bernal Diaz* ("Hist. verdad," etc., Vedia II, p. 89, cap. XCII), *Gomara* ("Conquista," p. 348, Vedia I), "Cada oficio y cada mercaderia tiene su lugar señalado . . ." *Sahagun* (Lib. X, cap. XVI, p. 41), "El que vende piedras preciosas, ó lapidario es de esta propiedad, que sabe labrar sutilmente las piedras preciosas y pulirlas. . ." He mentions as manufacturers of their own goods the following: "plateros de oro" (41), "Tratantes en mantas" (Cap. XVII, 42), "que venden mantas," "que venden cotaras" (Cap. XX, pp. 48, 49 and 51), "olleros," "que

sistance. Another name for the same profession was "man who takes more than he gives" "tiamicqui,"⁷⁶ a surname or slur. Lastly they were called "puchtecatl."⁷⁷ It is with this title that traders appear, among the ancient Mexicans, as privileged people. But such they became always only under peculiar circumstances. At certain intervals of time a number of men gathered, forming a company for the purpose of visiting the market places of other tribes and exchanging their home products for those of distant regions. Such an enterprise was always a great venture, and required a peculiar organization. The participants were to be numerous enough to resist the assaults of straggling bands, but they should not appear so numerous as to arouse suspicion. They should be well armed, but at the same time anxious to avoid collision. They needed a certain number of carriers, not only for the wares which they took along, but for their supplies, still the number of these carriers could not be too great. Such an expedition was in reality not a private, but a tribal undertaking. Its members not only carried into distant countries the industry of their tribe, but they also had to observe the customs, manners, and resources of the people whom they visited. Clothed with diplomatic attributes, they often were less traders than *spies*. Thus they cautiously felt their way from tribe to tribe, from Indian fair to Indian fair, exchanging their stuff for articles not produced at home, all the while carefully noting what might be important to their own tribe. It was a highly dangerous mission. Frequently they never returned, being waylaid, or treacherously butchered even while enjoying the hospitality of a pueblo in which they had been bartering.

The safe return however of such a party to the pueblo of Mexico was always an important and joyful event. The reception was sometimes, in solemnity of exercises and in barbarous

venden comales," "que venden cestos," "que vende petacas" (Cap. XXIII, p. 56, etc.), "oficial de navajas," "Los que hacen esteras" (Cap. XXIV, p. 68). In general, nearly all the aboriginal manufacturers are mentioned by him also as selling the products of their industry, and vice versa. *H. H. Bancroft* (Vol. II, pp. 383 and 384, cap. XII).

⁷⁶ *Molina* ("Vocabulario" Parte Ia, p. 84). "Tlanamacac," "tendero," "á vendedor de algo," Parte IIa, p. 127; "nite-tlanamicitia," "dar o trocar una cosa por otra, o recom-pensar" (p. 127, II). Exchange and sale appear almost synonymous.

⁷⁷ *Molina* (Parte Ia, p. 84). From "nite-tiamicaquiltia," "mohatrar" (II, p. 112).

⁷⁸ *Molina* (I, 84), also (II, 83, 84). *Sahayun* (Lib. IX, cap. III, p. 348, cap. V, pp. 354, 355, cap. X, p. 373, etc.), calls them also: "naoaloxtomeca," literally "peddlars of the Nahuatl." *Molina* (II, p. 78). The derivation of both words I am unable to give.

pomp, second only to that of the tribal forces returning from a successful campaign or foray. The traders went first to the central place of worship, there to stoop before the idols in token of adoration. From the great "medicine-lodge" the band repaired to the "tecpa," where they met the council of the tribe and its leading officers. Sometimes in presence of a concourse of people, and again if required, in "secret session" the traders communicated, for the benefit of the tribe, any results of their explorations. After this their particular quarters gave them appropriate receptions also, and in some instances even the whole tribe celebrated their return with solemn dances, and a distribution of victuals corresponding to what in our time would be called a popular feast.

In order to realize the substantial results of such expeditions we must bear in mind, that whatever they brought back had to be carried by men. As already intimated, the number of these men was limited. They could not, without jeopardizing the object of their mission or enterprise, take large bodies of assistants along. Besides, as these assistants also had to carry their own food, providing for many journeys through uncultivated ("neutral") wastes, this also restricted the amount of material brought home. However precious that material might be to the Mexican tribe, it was certainly limited in quantity. Finally, custom demanded that the most highly priced articles should be offered up to worship, to the stores of the tribe and of the kins. Little material gain therefore, remained to the courageous travellers themselves. The proceeds of their enterprise were largely for the benefit of the community and the reward bestowed upon them by that community rather than the profits derived from any traffic, composed the personal gain of the participants. This reward consisted of presents out of the public stores, and especially in the marks of distinction bestowed upon them.

Thus the so-called "merchants" of ancient Mexico became equivalent to distinguished braves, and their deeds entitled them frequently to the rank of chiefs. But if, on one hand, they had no opportunity to secure anything like personal wealth, on the other the rewards of merit did not attach to their offspring. No *class* of traders, no *caste* of merchants, can therefore have existed, and if a certain well-earned consideration attached itself to the person of those who embraced occasionally such a hazardous

and important occupation, this consideration did not go beyond the persons themselves, and was in proportion to the value of the achievements.⁷⁸

⁷⁸ Prescott ("Conquest," Book I, cap. V, p. 147). Bancroft (Vol. II, cap. XII, p. 287, etc.). Bastian ("Culturlander," Vol. II, pp. 697 and 698) and others like Brasseur de Bourbourg ("Histoire des Nations civilisées du Mexique et de l'Amérique Centrale," 1857-1859. Paris, Vol. III, p. 612, etc.), have given more or less detailed descriptions of the Mexican mode of traffic and commerce. Among the older sources, and those which necessarily formed the basis of my imperfect sketch, the leading position is occupied by Father Sahagun (Lib. IX, Vol. II, "Historia general de la Cosas de Nueva-España"). From these statements we gather, what has already been said (note 58), that the Tlatilulca were the leading traders (Cap. I, pp. 335, 336), and that they were organized and directed by particular chiefs of their own. The venerable father is not very clear in the matter of these particular officers, as (Cap. I) he names first two (p. 335), then five (p. 337, cap. II). and lastly (Lib. X, cap. XVI, p. 40), one: "Señor ó Principal entre ellos," whom he calls: "pochtecatlallotlac, ó acxótecatl, que es tanto, como si dijésemos que es gobernador de los mercaderes, y estos dos nombres y otros muchos que están puestos en la letra, se atribuyen al que es mayor principal gobernador ó señor ó que es casi padre y madre de todos los mercaderes." (Lib. IX, cap. III, pp. 348 and 349), he speaks of "the principals," "los mercaderes viejos" as "speakers of the traders" "pochtecatlatoque." Further on (Cap. X, p. 372), he speaks of the "pochtecatlallotlac" as the principals. We must infer from this that there were a number of these leading traders, and not one chief of the "caste." This evidence or rather indication of a possible separate organization is not noticed by Torquemada (Lib. XIV, cap. XXVII, p. 586), who simply speaks of the "old traders who remained at the pueblo." Clavigero (Lib. VII, cap. XXXVIII, pp. 526 and 527) merely mentions the older and the younger traders, but says nothing of a peculiar organization. It is singular, besides, that those authors or more properly chroniclers, in whose annals of Mexican warfare the Mexican traders play a very conspicuous part, make no mention at all of this peculiar caste-like organization which Sahagun seems to imply. Those authors are Durán and Tesosomoc. (In this instance I need not resort to detailed quotations, since the references in their works are far too numerous). Furthermore, Zurita, who is very detailed in his "Rapport," or rather as the full title has it "Breve y Sumaria Relacion de los Señores, y maneras y diferencias que habia de ellas en la Nueva España," while enumerating carefully the different kinds of chiefs and officers, is rather reticent about any such organization of the merchants. Compare for instance, p. 223, where he distinctly says that, they had a chief to treat with the "Lords and governors" in their name, and p. 240, where he incidentally mentions a "chief of the merchants" only. Sahagun goes further yet, however, in stating (Lib. IX, cap. V, pp. 356 and 357), that the merchants had their own jurisdiction over themselves, apart from that of the tribe or kin: "y los señores mercaderes que regian á los otros, tenían por su jurisdiccion y judicatorio, y si alguno de estos hacian algun delito, no los llevaban delante de los senadores á que ellos los juzgasen; sino que estos mismos que eran señores de los otros mercaderes juzgaban las causas de todos por sí; si alguno incurria en pena de muerte ellos le sentenciaban, y mataban ó en la cárcel, ó en su casa, ó en otra parte segun que lo tenían de costumbre." This he distinctly applies to the "pochtecas" of Tlatilulco, and to the time when "wrathful chief" (Montezuma the last), was at the head of the Mexicans. Not content with this he relates (Cap. II, pp. 330-342), how the merchants of Tlatilulco alone conquered several tribes, subjecting them to tribute for the benefit of the Mexicans. In all these statements Father Sahagun stands quite alone, and, if not directly contradicted, he is, at least so unsupported as to make his reports rather doubtful so far as they concern the organization and power of these traders as a distinct class. The story has a suspiciously Tlatilulcan coloring. Compare note 58. It is interesting to note, in connection with this, that Sahagun derived the information, the which he laid down in his "Historia general," almost exclusively

After this review of the question of stratification, so to say, among the ancient Mexicans, it may appear strange on our part

from *Tlatilulcan sources* ("Prologo," pp. 4 and 5, Vol. I). This diminishes necessarily in this instance, the value of his otherwise very full and highly important testimony.

The existence of such a body, powerful through wealth as well as through mental and intellectual faculties would, even as much as nobility, at once have destroyed the tribe as such, by breaking up the kins. The inconsistency of such a picture with the historical facts is glaring, and is shown even by the statements of modern writers. Compare for instance, Mr. H. H. Bancroft's statement of the condition of Tlatilulco after its capture by the Mexicans (Vol. V, p. 481), "heavy tributes were imposed, including many special taxes and mental duties of a humiliating nature" with his description of the state of its "merchant princes" (Vol. II, pp. 380 and 381). One fact is evident: if the traders formed occasionally, for certain purposes, clusters of their own, they selected their own leaders or directors and this was the case with trading expeditions as well as with feasts. See on feasts: *Sahagun*, Lib. IX, cap. III to XIV inclusive, Lib. I, cap. XIX, pp. 29 to 32. *Motolinia*, Trat. I, cap. VIII, p. 47. *Acosta*, Lib. V, cap. XXI, p. 389, etc. *Torquemada*, Lib. VI, cap. XXVIII, pp. 57 and 58. Lib. XIV, cap. XXVII, pp. 586 and 587. *Clavigero*, Lib. VI, cap. VII, p. 300. Lib. VII, cap. XXXVIII, p. 526, etc., and others. But as to any separate, permanent government of their own, this rests exclusively upon the authority of Sahagun, whereas it is amply proven, on the other hand, that any crime committed in trade or barter, was summarily disposed of by the regular officers of the kin or tribe without regard to the traders or merchants. We shall furnish the evidence in regard to this point in another note.

That the "pochtecas" occupied but one calpulli, that of Pochtlan, is also disproved, and even by *Sahagun* himself (Lib. I, cap. XIX, p. 31). "En este calpulli donde se contaba el mercader." (Lib. IX, cap. III, p. 347): "respondiente los mercaderes principales de los barrios que son uno que se llama Pochtlan, otro Aoachtlan, y otro Atlahuico como está en la letra". (Cap. III, p. 349) "convidaban á solos los mercaderes de su barrio; pues el que habia de ir por capitán de la compañía de los que iban, no solamente convidaba á los de su barrio, sino tambien á los que habian de ir con él." Also by *Zurita* ("Rapport," etc., pp. 223 and 224).

Lastly the question of wealth amassed in such quantities as to become an influential power in the merchants' hands, is also summarily disposed of by *Sahagun*. However often he speaks of riches gathered by them, the following quotations show how it must be understood: (Lib. IX, cap. II, p. 338, speech of one of the traders) "Cuando lleguemos á nuestro tierra, será tiempo de usar los barbotos de ambar, y las orejeras que se llaman quetzalcóyotl nacohitl, y los aventaleros y ojeadores de moecas, las mantas ricas que hemos de traer, y los maxtles preclados, solo esto será nuestra paga, y la señal de nuestra valentia," (p. 341) "y que las otras presias que les dió que arriba se dijéron, solo ellos las usasen en las grandes fiestas . . ." It thus appears that hoarding of any actual wealth was not to be expected. The lack of currency alone made it almost impossible for want of space, and gold and silver being only used for ornamental purposes and as a part of "medicine," we should mistake in expecting anything like "treasures." Here, as anywhere else, the supply was regulated by the demand, and this demand was in turn created by the numbers of the population, and by the use made of the metal. Since the latter was used only in a few ways, this had its effect on the amount also. Another cause, which is not sufficiently estimated, is found in the fact that carriers had to be used for everything, including food. Now, even if thousands went along (of which there is hardly any proof), the load of each hardly exceeded sixty pounds: "y daban á cada uno de estos que tenían alquilados, para que llevasen acuestas la carga que tenían señalada, y de tal manera las comparaban que no eran muy pesadas" (Cap. III, p. 350, Lib. IX). *Don Antonio de Mendoza* ("Avis sur les prestations personnelles et les Tamezes, 1er Recueil de Ternaux-Compane), says in 1550, "They must not carry any loads heavier than two arrobas," or about fifty pounds. *Bartolomé de las Casas* ("Brevissima relacion de la destruccion de las Yndias," Venetia, 1643, Italian and Spanish, p. 101), complains of three to four arrobas or

to concede, that nevertheless there were two very distinct classes within the area occupied by the tribe enjoying each a very different quality of rights. Now equality of rights is the fundamental principle of kinship;⁷⁹ if therefore there was a body connected with the tribe whose rights and privileges were inferior, it follows that the members of this body must have stood outside

seventy-five to one hundred pounds, as an excessive load. *Clavigero* (Lib. VII, cap. XL, p. 529), sixty pounds.

To conclude, I advert to the fact that the traders were held to tribute and especially to offerings for worship, as strictly as any other members of the tribe. I merely refer to *Herrera* (Dec. III, Lib. IV, cap. XVII, p. 138), who embodies in a few words the statements of other writers. *Motolinia* (Trat. I, cap. IV, p. 76), "No se desvelan en adquirir riquezas," and further on to p. 77; also (Trat. I, cap. IV, p. 81), "otros trabajan y adquirirían dos ó tres años cuanto podían, para hacer una fiesta al demonio, y en ella no solo gastaban cuanto tenían, mas aun se adeudaban". The picture of the trading expedition is mainly taken from *Sahagun* (Lib. IX, cap. II, III, IV) and *Torque-mada* (Lib. XIV, cap. XXVII). The reception only applies to cases of great importance. But every departure of a merchant as well as his return was feasted by the traders of his "barrios," sometimes with the concurrence of other barrios and of the chiefs and officers.

That, in consequence of their deeds, the merchants and traders were treated with distinction and created chiefs, follows from *Sahagun* (Lib. I, cap. XIX, pp. 30 and 31), "para que fuese honrado en el pueblo, y tenido por valiente; poníanle un barbote de ámbar, que es una piedra larga amarilla trasparente, que cuelga del beso bajo, ahuecado, en señal de que era valiente y era noble, y esto se tenía en mucho." But especially (Lib. IX, cap. II, pp. 338-341), "Estos mercaderes eran ya como caballeros, y tenían divisas particulares por sus hazañas". "*Des Cérémonies observées autrefois par les Indiens lorsqu'ils faisaient un teote*" (Ternaux, 1er Recueil, pp. 233 and 234). The custom of giving the rank of chief ("tecuhitl") to traders remained after the conquest when the chief became transformed into the Spanish *hidalgo* in consequence of a misconception of the former dignity. This is shown plainly by the arch-bishop, *Fray Alonso de Montúfar* ("*Supplique à Charles V en faveur des Macuales*, Mexico, 30 Nov. 1564, French translation by Mr. Ternaux, Appendix to his "*Cruautés horribles des Conquérents du Mexique*," p. 257). It was done to evade taxation.

The true position of the Mexican traders in their tribe and society is also stated plainly by *Sahagun* (Lib. I, cap. XIX, p. 30): "Son estos mercaderes sufridores de muchos trabajos, y osados para entrar en todas las tierras (aunque sean las de enemigos) y muy astutos para tratar con los extraños, así aprendiendo sus lenguas, como tratando con ellos con benevolencia para atraerlos así con su familiaridad." (Lib. IX, cap. II, p. 339) "pues que aunque nos llamamos mercaderes y lo parecemos, somos soldados que disimuladamente andamos á conquistar." (Id., p. 341) "Los dichos mercaderes del Tlatelolco se llaman también capitanes y soldados disimulados en hábito de mercaderes que andaban por todas partes." (p. 342) "Cuando quiera que el señor de Mexico queria enviar á los mercaderes, que eran capitanes y soldados disimulados á alguna provincia para que la atalayasen." *Zurita* ("*Rapport*," etc., p. 223) "Ils jouissaient de certains privilèges, parceque leur profession étoit utile à l'état." This is textually copied by *Bustamante* ("*Texcoco*," Parte IIIa, cap. V, p. 242). They were frequently but official spies and used as such, not only by the Mexicans, but against the Mexicans by foreign tribes. *Mendieta* (Lib. II, cap. XXVII, p. 130) copied by *Torque-mada* (Lib. XIV, cap. II, p. 538).

⁷⁹ *L. H. Morgan* ("*Ancient Society*," Part II, cap. II, p. 85, in relation to Iroquois more particularly). Among the ancient Germans or Teutons, see *Heinrich Luden* ("*Geschichte des deutschen Volkes*," 1823, Vol. I, Lib. III, cap. V, on the "*Gau*," pp. 492 and 493).

of any connection by kin. This presupposes a class of outcasts from the bond of kinship.

There is no evidence of the formation of such a cluster prior to the permanent settlement of the tribe. Neither can we trace its gradual increase from a given time. But a glance at some of the rules of kinship, and at the practical working of these rules finally crystallizing into an equivalent for laws, will enable us to discern its origin.

The relation of sexes being at the bottom of society based upon kin, it follows that sexual intercourse gradually assumed a regulated shape, proportionate to the progress in institutions. The ancient Mexicans had, as we have already established, advanced into descent in the male line, and had secured a nascent state of the modern family. Marriage was well known to them as a rule. But so powerful was the influence exercised by the kin, as unit of public life that, once the ritual union of a couple acknowledged as a necessity for future joint life, it exacted of its male members the obligation to marry for the purpose of propagating and increasing the kin. Only such as were naturally helpless, and such as in view of "medicine" made vows of permanent chastity, were excused. Any other youth therefore, who refused to take a wife at the proper age, was treated with contempt and consequently expelled from the kin.⁸⁰

WOMAN, among the aboriginal Mexicans, was in a singular predicament. Through the establishment of descent in the male line she lost her hold on public life, (which she latterly regained through the establishment of the family proper) and thus remained little else than a *chattel* in the power of man. Still, the ritual act of marriage being once adopted, the same obligation to marry, which we have already found incumbent upon the male, also devolved upon the female, and any girl therefore, who did not "take vows" for "medicine," or who was physically not mis-

⁸⁰ *Clavigero* (Lib. VII, cap. V, p. 481). *Zurita* ("Rapport, etc.," pp 133 and 134) "s'ils ne voulaient pas prendre des femmes, on les congédiait." *Mendietta* (Lib. II, cap. XXIV, p. 125), "Llegados á la edad de casarse, . . . Si pasando la edad se descuidaban, y veían que no se querían casar, tresquilábanlos, y despedíanlos de la compañía de los mancebos." This meant exclusion from the kin since, as soon as they were married, "they were classified, since, according to their custom, they were divided into sections each of which had a chief or captain, as well for the collection of taxes as for other reasons." These "chiefs or captains" were those of the *caipnilli*. *Zurita*, (p. 135), also *Bustamante*, ("Tezcoco," Part III, cap. III, p. 215), "Cuando se casaban los empadronaban. . . ." *Torquemada* (Lib. IX, cap. XII, p. 186, almost a copy of *Mendietta*).

shapen, if she did not join a husband at the proper age, was also regarded as a reprobate.⁸¹

To these two kinds of outcasts others should be added. It is a known fact that, if any member of a calpulli failed to cultivate his garden lot for two years, or if he failed to have it cultivated under his name, then he lost every and all rights thereto. This implied expulsion from the calpulli, consequently again, *expulsion from the bond of kinship*. Any one who removed from the quarter or calpulli to which he belonged, lost his rights thereby; in other words he became an outcast.⁸²

The lot of such people, thrust, as they were, outside of the pale of regular society, was an unenviable one. Removal to foreign tribes was not only dangerous, but even impracticable in the earlier times, when the class came into existence. Still they had to *live*. Therefore the males bargained their services to such members of the kins, as could afford to nourish them in return for manual labor.⁸³ No other remuneration but subsistence could be thought of. For the sake of subsistence therefore the outcast became, what the majority of authorities have called a *slave*.

Fray Juan de Torquemada writes as follows; — "The manner, in which these Indians made slaves, was very different from that of the nations of Europe and other parts of the world. It was very difficult at the outset of their conversion to understand it properly, but to make it clear (especially as the customs of Mexico, and Tetzcuco had it, since other Provinces not subject to these king-

⁸¹ *Anonymous Conqueror* (Vol. I, Col. de Doc., p. 397): "A gente che stima meno le donne di quanti nationi sono al mondo, perchi non gli comunicherebale mai i fatti loro, anchora che conoscuoe che il farlo gli potesse melter conto." *Oriedo* (Lib. XXXIII, cap. LI, p. 536). See *Torquemada* (Lib. XII, cap. III, p. 366), on "mancebas" in general in regard to women who refused to marry, though living a dissolute life. Also *Sahagun* (Lib. X, cap. XV, p. 37); *Zurita* (p. 129). If a girl abandoned her house, she might finally be disposed of as a slave, or be abandoned ("on les abandonnait").

⁸² *Zurita* (p. 56): "Le propriétaire qui ne cultivait pas pendant deux années, par sa faute ou par négligence, sans juste cause, . . . était averti de les cultiver; et s'il ne le faisait pas, l'année d'ensuite on les donnait à un autre" (Id. p. 54): "Si, par hazard, le membre d'un calpulli le quittait pour aller demeurer dans un autre, on lui retirait les terres qui lui avaient été assignées. . . . Adopted also by *Herrera* (Dec. III, lib. IV, cap. XV, p. 136). Compare "Tenure of Lands" (p. 426).

⁸³ *Gomara* ("Conquista," Vedia I, p. 411): "Los hombres necesitados y haraganes se vendian. . . ." *Cortés* ("Carta Segunda," Vedia I, p. 34): "Hay en todos los mercados y lugares públicos de la dicha ciudad, todos los días, muchas personas trabajadores y maestros de todos oficios, esperando quien los alquile por sus jornales." *Torquemada* (Lib. XIV, cap. XVI, pp. 564 and 565; and Cap. XVII, pp. 565 and 566). *Clavigero* (Lib. VII, cap. XVIII, p. 489).

doms, had other ways to make slaves) we say: that many conditions were lacking, to create them actual slaves. For of these slaves of this New-Spain, some had means, might own and possess them of their own, and they could not be sold again except under the conditions mentioned hereafter. The service rendered to their master was limited, not for always, nor ordinary. Some, upon marrying, became released, their relatives or brothers taking their place. There were also skilful slaves who, besides serving their masters, still kept house, with wife and children, purchasing and holding slaves themselves. The children of slaves were born free."⁸⁴

The Mexican term for slave was, literally a "purchased man" ("tlacotli.") He was in fact but a "bondsmen." Through a special contract, made before authorized witnesses, his services, the proceeds of his labor, and *not his person*, became pledged to another. The member of a kin had no direct ownership in him whom he employed, he could not sell him again without that employer's consent, nor could he take his life in punishment of crime. If the latter broke his contract through repeated evasion he might finally be "collared," that is, his neck was enclosed in a wooden yoke, by means of which he was fastened to a wall at night. If the man still contrived to escape, then he was turned over to worship and sacrificed; but in case he succeeded in secreting himself in the official house without being intercepted by his master or one of that master's people, then he was spared, and even liberated from his bonds.⁸⁵ In addition to the supply furnished to the class of outcasts in the manner above indicated, there were accessions to it from outside. Fugitives were of rare occurrence, since such, if from a tribe against which war was waged, were regarded as precious additions, too important to be ranged among the outcasts.⁸⁶ But we have several instances, in the ancient history of Mexico, of destructive drouths as well as of disastrous inundations, depriving the inhabi-

⁸⁴ "*Monarchia Indiana*" (Lib. XIV, cap. XVI, p. 564).

⁸⁵ I have gathered these details mostly from *Torquemada* (Vol. II, pp. 564-568). Compare besides others, *Vetancurt* (Vol. I, pp. 483, 484, and 495) and nearly all modern writers.

⁸⁶ *Mendieta* (Lib. II, cap. XXVI, p. 130): "Y el de la parte contraria salia alguno a descubrir y dar aviso cómo su señor ó su gente venian sobre ellos, al tal dábanle mantas y pagábanle bien." Copied by *Torquemada* (Lib. XIV, cap. II, p. 538), and *Vetancurt* (Parte II, Trat. II, cap. III, p. 384).

tants of the valley of their annual crops. In order to escape threatened famine, fathers bartered their services and those of their children for food, to such tribes as possessed sufficient stores.⁸⁷

If the consequence of expulsion from the bond of kinship or of voluntary abandonment of the rights as members, were, for the male, a degradation to work for others, it was altogether different for the female. The position of women was, as we have already intimated, little better than that of a costly animal, and protection was awarded them only in so far as they represented a part of their husbands' property. This the kin itself was obligated to defend and protect. The wife, however, had no other right than that. She could not complain if her lord and master increased his "family-stock" by the addition of one or more concubines, nor if he strayed about to satisfy his desires with other females. Such acts were even subservient to the kins' interest, since they led to an increase of numbers. But the women themselves who gave their persons away for such purposes could only belong to the class of outcasts; for illicit intercourse with wives and daughters of the kins was, as we shall hereafter see, severely punished. Through the formation of the class of outcasts, or at least along with it, prostitution became tolerated among the ancient Mexicans, while polygamy in the shape of concubinage was introduced as a legitimate custom.⁸⁸

⁸⁷ Besides the famines recorded since the conquest, the older authors and sources in general notice several (at least two) previous to 1520. It is not to our purpose to discuss their dates. They are given with the usual variation and discordance. Thus for instance, the "*Codex Telleriano Remensis*" (Kingsborough, Vol. I, plate VII, and Vol. VI, p. 138) mentions one in 1404 (1 Tochtli), which is evidently incorrect, since 1 Tochtli would be 1403. The Ce-Tochtli thus mentioned, is 1451. In that year, *Durán* (Cap. XXX, p. 245) places the beginning of the great drouth which, after three years duration, so completely exhausted the Mexican stores and supplies that "wrathy chief" the older, ("Huehue Motecuzuma") told the people "que cada uno vaya á buscar su remedio" (p. 247). In consequence of it, it is reported that many people "sold their sons and daughters to the merchants and principals (señores) of the tribes that had wherewith to give them to eat, and they gave for a baby (or boy rather, "niño") a small basket of corn (maíz) to the father or mother, obligating themselves to sustain the child as long as the famine might last, for that if afterwards the father or mother might wish to redeem it, they should be obligated to pay these aliments." This is, as usual, also stated by *Tezozomoc* (Cap. XL, p. 64), though with less details. *Torquemada* (Lib. II, cap. LXXIII, p. 203) reports the same, but placing it fifty years later, under the last "wrathy chief" (Cap. CX, p. 235) in 1505, A. D. *Sahagun* (Lib. VIII, cap. I, p. 268), agrees with *Durán* and *Tezozomoc*, so does *Clavigero* (Lib. IV, cap. XII, p. 263): "Many sold themselves for food." This date is also 1451-1454. It is singular that *Torquemada* (Lib. II, cap. XLVII, p. 158) also relates the famine under the older "wrathy chief," and his words are almost textually copied by *Clavigero*.

⁸⁸ The possession of more than one woman, or rather the enjoyment of more than

We thus witness, among the ancient Mexicans and beneath the kins composing the tribe, a lower class of society, a floating

one, was a mere matter of subsistence. As already remarked by *Peter Martyr* (Dec. V, cap. X, p. 333): "He further saith, that the common sort of people content themselves with one wife; but that every Prince may maintayne harlots at his pleasure." *Gomara* ("Conquista, etc.," Vedia I, p. 438): "Cuatro causas dan para tener tantas mujeres: la primera es el vicio de la carne, en que mucho se deleitan; la segunda es por tener muchos hijos; la tercera por reputacion y servicio; la quarta es por granjería; y esta postrera usan mas que otros, los hombres de guerra, los de palacio, los holgazanes y tahures; hacienlas trabajar como esclavas, etc." The same author adds: "Aunque toman muchas mugeres, á unas tienen por légitimas, á otras por amigas, y á otras por mancebas. Amiga llaman á la que despues de casados demandaban, y manceba á la que ellos se tomaban." According to this statement, a husband could entertain three classes of women: one legitimate wife, concubines which he obtained with permission of their parents and prostitutes or mistresses. *Varietas delectat!* *Torquemada*, however (Lib. XII, cap. III, p. 376), says: "Otra especie de mancebas havia, y se permitia, que era la que los Señores principales, ó las tomaban ellos, ó las pedian despues de já casados, con la Señora, y muger legitima, que llamaban cihuapilli." This reduces the "stock" to two kinds, at least. *Molina* (Trat. II, cap. VII, pp. 124-128) mentions polygamy as a rule, and describes the infinite trouble of the priests to find out the legitimate wife, assuming it to be "aquella con quien estando en su gentilidad primero habian contraído matrimonio" (p. 127). According to him the first legitimate marriage took place 14 October, 1526 (p. 124), but nevertheless for three or four years afterwards: "no se velaban, . . . sino que todos se estaban con las mujeres que querian, y habia algunos que tenían hasta doscientas mujeres, y de allí abajo cada uno tenía las que quería" (p. 125). In defence of this state of polygamy the Indians alleged "tambien las tenían par manera de granjería, porque las hacían á todos tejer y hacer mantas y otros oficios de esta manera" (p. 125). *Mendieta* (Lib. III, cap. XLVII and XLVIII, pp. 300-306) is very explicit on the same question. He asserts that the early missionaries found: "Por otra parte se hallaba que el comun de la gente vulgar y pobre no tenían ni habían tomado sino sola una mujer . . . sino que los señores y principales, como poderosos, excederian los límites del uso matrimonial, tomando despues otras, las que se les antojaba" (p. 301). The final result of these troublesome disputes and investigations is expressed as follows (p. 306): "y que sabiendose cual era la primera mujer, era cierta cosa ser aquella la legitima, y viviendo aquella, otra cualquiera habia de ser manceba." The question is as to whether a daughter of any member of the kin could ever lawfully become a concubine, or whether this was only the case with female outcasts? The stories about "Handful of Reeds," who, his first wife being sterile, was subsequently married to a number of daughters of chieftains (see *Durán*, Cap. VI, pp. 48 and 49, *Torquemada*, Lib. II, cap. XIII, p. 96, *Vetancurt*, Parte II, Trat. I, cap. XI, p. 270, *Clavigero*, Lib. III, cap. III, p. 194) is manifestly untrue. The object of these subsequent marriages is given as in order to obtain heirs to the throne. Now it is well known that there was no "succession," but only an "election," consequently there was no such object as the one claimed. The chief certainly had concubines, but there is no evidence to show that he obtained them from the kins. Again we are treated to long descriptions of the dazzling polygamy of the chiefs of Tezcuco. For instance, *Ixtlixochitl* ("Hist. des Chichimèques," Cap. XLIII, pp. 305 and 306) relates of "Fasting wolf" "nezahualcoyotl," from "nezahualttil," "ayuso," etc., (*Molina*, II. 64), and "coyotl" how he had a number of concubines previous to his marriage with an Indian girl of Coatlichan. Further on he relates the well known "Uriah and Bathsheba" story (pp. 509-513), attributed to the same chief, and which has been so often recopied. His successor in office, "Fasting boy" (*Nezahualpilli*," compare the picture of this name in *Durán*, *Lam.* 23 and 24, *Trat.* 10), is reported by him to have had 2000 concubines, "But, besides the queen, he had intercourse with forty" (Cap. LVII, p. 33 of 2d Vol.). His marriage with that only legitimate spouse is described (Cap. LXIV, p. 66, Vol. II). He is, of course, supported by *Torquemada*

population of "hangers-on to the tribe." This class was yet not very numerous; still it grew slowly and steadily. Prohibited from carrying arms, and therefore from taking any part in warfare other than that of carriers and, perhaps, runners, the heavy drudgery of work was at their charge.⁸⁹ Even the tillage of lots appears to have been frequently assigned to them, and it may be that what is commonly termed the class of "macehuals" consisted of the outcasts who improved "tlalmilpa" for the benefit of members of the kin.⁹⁰ Besides, it is distinctly implied, if not stated,

(Lib. II, cap. XLV, pp. 154-155; cap. LXII, p. 184; Lib. XIII, cap. XII, p. 436). *H. H. Bancroft* (Vol. II, p. 286) admits two classes of concubines for married people, one of which he calls "the less legitimate wives." Among other authorities, he adduces in evidence *Oviedo* (Lib. XXXIII, cap. I, p. 200): "Tenia esto Olintech treynta mugeres dentro de su casa, con quien el dormia, á las quales servian mas de ciento otras." The same statement is also found in *Gomara* ("Conquista," etc., Vedia I, p. 336) and others. (The name for the mistress ("mancebn") of a married man is "teichtacamecauh" (*Molina*, I, p. 81), which means literally "thy secret tie," from "Tehuatl"—"thou," "ichtaca"—secretly (II, p. 32), and "mecatl"—rope or cord (II, 56). See in a further note.

The most significant statements, however, are those already reported, of *Motolinia* and of *Gomara*, that the Indians explained their polygamy by the fact that they kept these women for their work. In other words, they were purchased hands. This is indicated by the following authorities: *Gomara* ("Conquista," etc., Vedia I, p. 441), "Las malas mugeres de su cuerpo, que lo daban de balde si no las querian pagar, se vendian por esclavas por traerse bien, ó quando ninguno las queria, por viejas ó feas ó enfermas; que nadie pide por las puertas." *Torquemada* (Lib. XIV, cap. XVI, p. 563): "Havia tambien mugeres, que se daban á vivir suelta, y libertadamente; y para proseguir este mal Estado, que tomaban, tenian necesidad de vestir curiosa, y galanamente, y por la necesidad, que pasaban, porque no trabajaban . . . llegaban á necesitarse mucho, y hacianse Esclavas;" and the same authority adds (Cap. XVII, p. 566): "y muchas veces los Amos se casaban, con Esclavas suias," without any closer definition however. Finally, the *Anonymous* says (p. 397): "Nelle nozze di questa patrona principale fanno alcune cirimonie. Il che non si osserva nelle nozze dell' altre."

There is no evidence that a married man could increase the number of his women even with the consent of the parents, in other words, marry a girl. But if the latter had, through her own lewd conduct, become abandoned and cast off, then he could associate with her as his mistress without regard to his wife proper. Also he might purchase (or rather barter for) a female and afterwards make a concubine of her, even if she was of a foreign tribe. Prisoners of war (females) may occasionally have been spared also, but this suggestion rests on very slight evidence (compare "*Andnimo*," p. 373), and may apply only to prisoners of war purchased from other tribes (*Sahagun*, Lib. I, cap. XIX, p. 32).

⁸⁹ They were the "tanenes," carriers. The Mexican word is "tlamama," from "tlacatl"—man, and "nitla-mama"—to carry a load (*Molina*, II, p. 51). *Don Antonio de Mendoza* ("Acta sur les Prestations personnelles," etc., p. 358, Ternaux, Recueil). *Zurita* (pp. 250, 251, and 280) "*Lettre des auditeurs Salmeron, Maldonado, Ceynos et Quiroga a l'Imperatrice*." (Mexico, 30 March, 1531, in 2d Recueil, etc., pp. 143 and 144): "Les Indiens ont de tout temps porté des fadaux, ils y sont acoutumés . . ."

⁹⁰ This is a mere suggestion. The majority of descriptions, however, are such that the "macehual" may have been, and probably was, a member of the kin. Still, in such cases, when that member could not improve his lots himself, families of "bondsmen" may have done the work for him, and thus become included in the general picture. Quotations are superfluous, since the information is not, as yet, positive enough.

that for actions of merit such people might be re-adopted, and thus restored to their original rights. The anonymous conqueror asserts that the performer of any valorous deed was highly rewarded and made a chieftain, "even if he was the vilest slave."⁹¹ But without such formal re-adoption, no outcast could emerge from his inferior and unprotected condition. The overwhelming majority of Mexico's aboriginal people, however, consisted of members of the twenty kins shown to have composed the tribe. These all enjoyed equal rights; consequently all had the same duty. Both right and obligation were governed by the organization of kinship. While it is impossible for us to follow here strictly the order of enumeration of these rights and obligations, established in the admirable researches of Mr. Morgan, we still can distinctly trace all of them in ancient Mexican society, operating with more or less unimpaired vitality.

*The kin claimed the right to name its members.*⁹² A family name was unknown to the ancient Mexicans,⁹³ and thus our assertion that the modern family was not yet established among them, acquires further support. Within a few days after the child's birth, its mother in presence of all the neighbors (consequently of the "calpulli" or kin) gave the child a name through the medium of the women assisting her delivery. This name, generally taken from that of the day of birth, had a superstitious bearing, and was to accompany the child during the period of its utter helplessness.⁹⁴ A second "naming" took place several

⁹¹ "*Relazione di alcune Cose della Nuova Spagna*" (Col. de Doc., I, p. 371). *Torquemada* (Lib. XIV, cap. XVII, p. 566): "y Esclavos havia que regian, y mandaban la casa de su Señor, como hacen los Malordomos."

⁹² *Morgan* ("*Ancient Society*," pp. 71 and 78).

⁹³ *Motolinia* (Trat. I, cap. V, p. 37): "Todos los Niños cuando nacia[n] tomaban nombre del día en que nacia[n]." *Torquemada* (Lib. XIII, cap. XXII, pp. 454 and 455). The family name was introduced by the Spaniards, who gave other names at the time of baptism.

⁹⁴ *Motolinia* (Trat. I, cap. V, p. 37). *Sahagun* (Lib. IV, cap. I, pp. 283 and 284, in general the entire fourth Book, which gives a very full idea of all the superstitions connected with birthdays; more especially Cap. XXXV and XXXVI and Lib. VI, cap. XXXVII, pp. 217-221). All the children of the quarter were invited to the festival: "En este tiempo que estas cosas se hacian, juntabanse los mosuelos de todo aquel barrio, y acabadas todas estas ceremonias, entran en la casa del y toman la comida que allí les tenían aparejada," The naming took place in presence of "todos los parientes y parientos del niño, viejos y viejas" (p. 218). *Mendieta* (Lib. II, cap. XIX, p. 107): "Estos nombres tomaban de los ídolos ó de las fiestas que en aquellas signos calan, y á veces de aves y animales y de otras cosas insensatas, como se les antojaba." (Lib. XIII, cap. XXXV, p. 267). *Torquemada* (Lib. XIII, cap. XX, p. 450: "Luego hacian convocacion de todos los Deudos, y Parientes, de los Padres, y de todos los Amigos, y

months later, which was performed by the medicine-man of the kin.⁹⁵ Both of these names were preserved, but if the full-grown man ever performed some action of merit in the service of the whole tribe, then the tribe bestowed upon him a third name as an honorable title attached to his person in reward for his deeds.⁹⁶

It was the duty of the kin to educate or train its members to every branch of public life. For all public purposes, man only must be taken into account. This appears obvious from what was said already concerning the position of women in general. Now each calpulli, or localized kin, among the ancient Mexicans had, as we have shown in "Art of War,"⁹⁷ its "House of the Youth" ("telpuch-calli") joined to its "medicine-lodge" or temple. Thither the boys were brought at an early age, to be instructed in whatever was needed for after-life. In order to train their bodies they were held to manual labor, and to the ordinary duties of worship. The use of weapons was made a prominent object of teaching; so was the dance and song, the latter coupled with ordinary Indian rhetorics.⁹⁸ These houses of education were under the

Vecinos, que para este acto se juntaban . . . y entonces le ponian el nombre." Also (Cap. XXII, p. 456; cap. XXIII, p. 456): "De la misma manera, que quando alguna de estas Indias paria, se usaba juntarse toda la Parentela. y las vecinas, y amigas. . . . De esta misma manera lo acostumbraban hacer para el fingido Bantismo." Gomara ("Conquista," Vedia I. p. 438): "En este lavatorio les ponian nombre, no como querian, sino el del mismo dia en que nacieron." *Ytancuri* (Parte II, Trat. III, cap. VIII, p. 462).

⁹⁵ This is stated by Gomara (Vedia I, p. 438): "y dende á tres meses, que son de los nuestros dos, los llevaban al templo, donde un sacerdote que tenia la cuenta y ciencia del calendario y signos, les daba otro sobrenombre, haciendo muchas ceremonias, y declaraba las gracias y virtudes del idolo cuyo nombre les ponía, pronosticándoles buenos hados." *Motolinia* (Trat. I, cap. V, p. 37): "Despues desde á tres meses presentaban aquella criatura en el templo del demonio, y dabanle su nombre, no dejando el que tenia, y tambien entonces comian de regocijo, . . ."

⁹⁶ Gomara (Vedia, p. 438). *Motolinia* (Trat. I, cap. V, p. 37). *Torquemada* (Lib. XIII, cap. XXII, p. 456). *Clavigero* (Lib. VI, cap. XXXVII, pp. 437, 438). *Durán* (Cap. XI, pp. 96, 97, and 98).

⁹⁷ "Art of War," p. 101. Relying on Humboldt, I assumed fifteen years to be the age when military instruction began, but the general instruction began much sooner. See note 96.

⁹⁸ Gomara (Vedia, p. 438). *Sahagún* (Lib. III, cap. IV, cap. V, p. 268): "Habiendo entrado en la casa del Telpuchcalli el niño, dábanle cargo de barrer, limpiar la casa, poner lumbre, y hacer los servicios de penitencia á que se obligaba. Era costumbre que á la puesta del sol, todos los mancebos iban á bailar, y danzar á la casa que se llamaba Cuicacalco cada noche, y el muchacho tambien bailaba con los otros mancebos; llegando á los quince años. y siendo ya mancebillo, llevábanle consigo los mancebos mayores al monte á traer la leña, que era necesaria para la casa del Telpuchcalli, y Cuicacalco, y cargábanle las rodela para que las llevase acuestas;" (p. 269): "La vida que tenian era muy áspera . . ." (Cap. VI, pp. 270 and 271; Lib. VI, cap. XXXIX, p. 224), and other incidental notices. *Mendieta* (Lib. II, cap. XXIV, pp. 124, 125). *Torque-*

special direction of experienced men, called therefore "Speakers of the Youth" ("telpuchtlatoca") and "elder brothers" ("teachcaubtin,") in another capacity. They had not only to provide for the physical training of their pupils, but also for their intellectual development, as far as the state of knowledge permitted.⁹⁹ Such places of training were called also "the place where I grow" ("nezcaltiloyan"), or "the place where I learn" ("nemachtilyan.")¹⁰⁰ It is not true that the youth were constrained to a permanent, almost monastic residence in such houses; but while there they improved in common certain special plots of land, in all likelihood the so-called "temple-tracts," out of which the daily wants of worship were supplied.¹⁰¹ In connection with this mode of education, we have to consider here an objection which cannot fail to be raised against our views.

It is frequently given out as a fact, that besides the "Houses of the Youth" mentioned, there was a *special* place of education for the children of "noblemen" and this is adduced as a proof of

mada (Lib. IX, cap. XII, pp. 185 and 186; Lib. XIII, cap. XXVIII, XXIX and XXX) and others.

⁹⁹ "Art of War" (pp. 101, 119 and 120). *Mendieta* (Lib. II, cap. XXIV, pp. 124 and 125): "Los otros se criaban como en capitánias, porque en cada barrio había un capitán de ellos, llamado telpuchtlatō, que quiere decir, guarda ó capitán de los mancebos." *Torquemada* (Lib. IX, cap. XII, p. 185): "y tenían un Rector, que los regia, y gobernaba, que se llamaba Telpochtltō, que quiere decir, Guarda, ó Caudillo de los Mancebos, el qual Telpochtltō tenía gran cuidado de doctrinarlos, y enseñarles, en buenas costumbres." *Sahagun* (Lib. III, cap. V, p. 269): "y si era ya hombre valiente y diestro, elegíanle para regir á todos los mancebos, y para castigarlos, y entonces se llamaba Telpuchtlatō." (Lib. VIII, cap. XIII, p. 301): "Tambien daban de comer á los que criaban los mancebos que se llaman telpuchtltōs, . . ." (Cap. XVII, p. 305): "en este lugar se juntaban los maestros de los mancebos que se llamaban tlachcauān, y telpuchtlatōques . . ." (Also Cap. XXXVIII, p. 331). *Felancurt* (Part II, Trat. III, cap. VI, p. 451): "y un rector que llamaban Telpochtltō, el que habla y gobierna á los mancebos." *Codex Mendoza* (Vol. I of Kingsborough plates 62 and 63).

Sahagun usually calls the "achcauhitli," "alguaziles," or executors of justice. But above we see that he calls the "tlachcauān," also "masters of the youth." Both names are corruptions of "teachcauhitlin." *Tezozomoc* (Cap. XXXVIII, p. 60) calls the "Achcacauhitlin, mayores de armas y de doctrina y de ejemplo." (Cap. LVII, p. 85): "Tras ellos vinieron los que llaman Achcauhitlin, señores de los varrios, y maestros de mancebos." (Cap. LXXI, p. 121): "mayorales y ministros, y los hicieron juntar como escuelas en cada un varrio que llamaban telpochealli." (Cap. LXXXVIII, p. 134): "Los mancebos iban cada día á los varrios al ejercicio de las armas á la escuela de armas telpochealco, adonde los enseñaban con valerosos ánimos, y las maneras de combatir." Finally *Clavigero* (Lib. VII, cap. II, p. 452) refers also to the 53d picture of the *Mendoza Codex*, representing a boy of fifteen years, who is turned over to an "achcauhitli, or officer," to be instructed in the art of war.

¹⁰⁰ *Molina* (*Vocabulario* II, pp. 66 and 72). *P. Ignacio de Paredes* ("Doctrina Breve sacada del Catecismo Mexicano," Reprint of 1809).

¹⁰¹ *Sahagun* (Lib. III, cap. V, p. 269) says that, whereas they slept at home, that is, at the "house of youth," they ate with their families (" aunque comían en sus casas pro-

the existence of a privileged class of nobles.¹⁰² Besides the other evidence which we have mentioned, as against the existence of nobility in ancient Mexico, we shall state here that the place called "calmecac" which is the name given to that supposed "school for the nobles," was in reality something quite different.

Fray Bernardino Sahagun, in his description of the central medicine-lodge or great temple of the Mexican tribe, says that in the house called calmecac those who devoted themselves to "medicine," or to the priesthood were trained for that office and lived in said house along with the medicine-men themselves.¹⁰³ There were several buildings or rooms bearing that name, all within the square occupied by what is commonly termed "the great temple of Mexico," and these were the places where the medicine-men and whoever was attached to them and to their offices, actually dwelt.¹⁰⁴ Consequently these places were also

pias"). *Zurita* (pp. 131-133) asserts that "certain fixed days, the children of land-holders had permission to share their father's labor." That the "temple tracts" were probably identical with those worked by the young men is made evident by *Sahagun* (Cap. V, Lib. III, p. 269; cap. VIII, p. 275). *Zurita* (p. 131): "Ils étaient obligés de travailler aux terres affectées à ces établissements." *Torquemada* (Lib. IX, cap. XII, p. 185): "Tenian sus Tierras. y Heredados para su sustento (que debian de ser de las dedicadas al uso, y gasto de los Templos) en ellas sembraban, y cogian Pan para su sustento." *Mendieta* (Lib. II, cap. XXIV, pp. 124 and 125). *Gomara* (Vedia, p. 438). The latter is very plain, connecting all the "schools" and their lands with the temples.

¹⁰² *H. H. Bancroft* (Vol. II, pp. 243 and 244). Nearly all the older writers call it a higher school, but I shall hereafter discuss their statements. See also Prescott ("Mexico," Book I, ch. III, p. 69).

¹⁰³ "*Historia general de las Cosas de Nueva España*," (Lib. III, cap. VII, p. 371): "Los señores, ó principales, ó ancianos, ofrecian á sus hijos á la casa que se llamaba Calmecac, era su intencion que alli se criasen para que fuesen ministros de los idolos." Id., (Cap. IV, p. 266): "y lo ofrecian á la casa de los idolos que se llama Calmecac, para que fuese ministro de ellos, viniendo á edad perfecta." But especially (Lib. VI, cap. XXXIX, p. 223): "si le prometian á la casa Calmecac, era para que hiciese penitencia, sirviese á los dioses, viviese en limpieza, en humildad y castidad, y para que del todo se guardase de los vicios carnales."

¹⁰⁴ The description furnished by *Sahagun* (Lib. VI, Appendix, "Relacion de los Edificios del gran Templo de México," pp. 197 to 211) mentions seventy-eight parts or edifices, among which were the following, with the name "Calmecac:"

The 12th edifice "Tlilancalemecac," a shrine to the goddess Civocoatl and inhabited by three priests, medicine-men (p. 201).

13th edifice "Mexicocalmecac," called by him "a monastery wherein the priests dwelt who served daily in the Cu of Tlaloc" (p. 201).

24th edifice, "Vitznaoac Calmecac," inhabited by the priests of the idol Vitznaoac, (p. 203)

27th edifice, "Tetlanmancalmecac," where the priests of the temple dedicated to the goddess Chantico lived, as in a "monastery," (p. 203).

35th edifice, "Tlamatzinco Calmecac," "a monastery," inhabited by the priests of the god Tlamatzincatl, (p. 204).

54th edifice, "Yopico Calmecac, "monasterio ó oratorio," (p. 207).

61st edifice, "Tzommolco-calmecac," "a monastery where dwelt priests of the god Xibtecuitl," (p. 207).

the abodes of such men as underwent the severe trials preliminary to their investiture with the rank of chief ("tecuhtli.") The word "calmecac" is often interpreted as "dark house" but its etymology is probably quite different. In no case, however, was that building a school for a "privileged class of children."¹⁰⁵

*The kin had the right to regulate and to control marriage.*¹⁰⁶ We have seen that the obligation to marry rested upon every member of a "calpulli." Where tribal society is still in its pure and original condition marriage in the same kin is absolutely prohibited. The matrimonial customs of the ancient Mexicans were closely scrutinized by the Catholic church, and a rigid investigation by the early missionaries has proven that not only was marriage between close relations strictly prohibited, but it was also discouraged (if not forbidden) between members of the same kin.¹⁰⁷ Mr.

In all, seven "calmeca" within the enclosure surrounding the great "house of god" of Mexico-Tenuchtitlan. *Torquemada* (Lib. VIII, cap. XI to XVI) also describes the various places, mentioning "Huiznahualmecacac," "Casa de recogimiento, y habitacion de los Sacerdotes, y ministros de este lugar" (p. 150). "Tlamatzinco calmecac," donde vivian y tenian su asistencia los Sacerdotes, y ministros de este dicho Templos" (p. 151). "Yopico calmecac" "donde habitaban, y se criaban los muchachos" (p. 153). "Calmecac" — "donde se criaban los niños" (p. 149). Besides these statements, the two authors just quoted allude to the Calmecac in the same manner at various places. *Sahagun* (Lib. III, Appendix, cap. VII, and especially Cap. VIII, pp. 274-276). Already the title of this chapter is significant: "De las costumbres que se guardaban en la casa que se llamaba Calmecac, donde se criaban los Sacerdotes, y ministros del templo desde niños." *Torquemada* (Lib. XIII, cap. XXVIII, pp. 469-471). *Johannes Eusebius Nieremberg* ("Historia Natural," Lib. VIII, cap. XXII, pp. 143-146). He copies Hernandez who, in turn, almost verbally agrees with Sahagun. *Oviedo* (Lib. XXXIII, cap. X, p. 303; Cnp. LI, p. 537). *Gomara* (Vedia I. p. 438).

¹⁰⁵ *Molina* (II, p. 11). "Calmeca tiatolli," "palabras dichas en corredores largos" and "Calmelaotli," "Sala grande y prolongada, ó corredor de la casa." The word may be decomposed into "Calli" — house, and "mecayoti" — consanguine relationship, or "mecatl" a cord or tie. "House of Ties"?

¹⁰⁶ "Ancient Society" (p. 74).

¹⁰⁷ Already *Motolinia* (Trat. II, cap. VII) pictures vividly the difficulties encountered by the priests in regard to regular marriage. The first question to be determined was that of the legitimate spouse. This has already been investigated in a former note. The next question was that of the degrees of consanguinity, or affinity. It was rigidly inquired into whether perhaps, custom had sanctioned intermarriage of brothers and sisters. *Gomara* (Vedia, p. 439): "No casan con su madre ni con su hija, ni con su hermana; en lo demas poco parentesco guardan; aunque algunos se hallaron casados con sus propias hermanas;" thus admitting the fact that intermarriage of that kind existed. *Mendieta* (Lib. III, cap. XLVIII, p. 305) also concedes that such may have been the case, and infers that these marriages should be regarded as valid. The question of intermarriage between children of the same issue becomes important through the statements and discussion of *Torquemada* (Lib. XIII, cap. VII, p. 480) about the matrimonial customs of the Indians of *Vera-Paz*: "The Indians of Vera-Paz were compelled frequently, on account of their customs of relationship, to marry brothers with sisters for this reason: It was not customary for those of one clan, or tribe, to marry the women of the same tribe (pueblo), and thus they sought for them from others, because

H. H. Bancroft to whom every student of American antiquities must look with a deep feeling of gratitude for his valuable services, says on the subject: "marriages between blood relations or those descended from a common ancestor were not allowed."¹⁰⁸ The act of marriage itself was preceded by negotiations on the part of one calpulli (that of the man) with another (that of the woman), the negotiations terminating in something like a *purchase* of the girl.¹⁰⁹ It is beyond our purpose, at present, to dwell on the

they did not reckon the children, born in foreign tribes or lineages, as belonging to their family; although if the mother had issued from their lineage, and the reason for this was, that this relationship was only attributed to the men." Now this is a very plain statement and picture of "descent in the male line," with the rules of kinship as strongly and fully in vigor as, with "descent in the female line" among the Iroquois. The inhabitants of Vera-Paz spoke, according to *Herrera* (Dec. IV, cap. X, cap. XIV, p. 239), "various Languages," but they selected one at the instance of the Dominican fathers, "to use it in general." *Dr. Berendt* ("Remarks on the Centres of Ancient Civilization in Central America and their Geographical Distribution," address read July 10, 1878, pp. 9 and 10) mentions in Vera-Paz three idioms: the "Kekchi" (Alta Verapaz), "Pokoman" (in the South), and the "Q'Quiché" (Western Verapaz). See also *E. G. Squier*, ("Monograph of Authors who have written on the Languages of Central America," *Introd.*, p. IX). *H. H. Bancroft* (Vol. III, cap. IX, p. 760). *Diego García de Palacio* ("Report to the King of Spain in 1578," German translation by the late *Dr. Alex von Frantz*, pp. 4 and 64). *Pimentel* ("Cuadro descriptivo de las Lenguas," etc., Vol. I, pp. 81-84). The close connection in customs and institutions (see my notes in regard to the calendars of Mexico and Central America) between the Q'Quiché and the Mexicans, and the probable identity of their origin, make it not unlikely that the latter had also the same rule, "not to marry within the tribe or lineage," or rather in the kin. As every tribe in Mexico consisted of a number of Calpulli, there was no need of selecting the wife from outside of the settlement. The manner of arranging marriages furnishes direct evidence of the fact, that the wife was, at least usually, from another kinship. (See note 109.) See especially, besides, *Sahagun* (Lib. II, Appendix, p. 228).

¹⁰⁸ "Native Races" (Vol. II, cap. VII, p. 251).

¹⁰⁹ Not only the consent of the young man's parents was requisite, but also that of the "tepuclatlato" (speaker to the youth) of his "barrio" or calpulli, i. e., of his kin. This fact is abundantly proven. *Sahagun* (Lib. VI, cap. XXIII, pp. 152, 153) says: The "speaker" was invited to the house and after having "eaten and smoked," "the old parents of the young man, and the old men of the barrio sat down," and the case was told to them. The "speaker" then took formal leave of the youth "y dejaban al mozo en su casa de su padre." (Lib. III, Appendix, cap. VI, p. 271). he again insists that the consent of the "maestros de los mancebos" was required. *Zurita* ("Rapport," p. 132): "Lorsqu'ils étoient d'âge à se marier, c'est à dire à vingt ans on un pen plus, ils en demandaient l'autorisation" (p. 134). *Mendieta* (Lib. II, cap. XXIV, p. 125): "Llegados á la edad de casarse . . . pedian licencia para buscar mujer; y sin licencia por maravilla alguno se casaba, y al que lo hacia, demas de darle su penitencia, lo tenían por ingrato, malcriado y como apóstata" . . . *Torquemada* (Lib. XIII, cap. XXX). It was the kin of the male which solicited the girl, and this solicitation was carried on by women, who brought presents. Compare also *H. H. Bancroft* (Vol. II, pp. 251 to 262). *Petancuri* (Part II, Trat. II, cap. XII, p. 477. "Teatro Mexicano," Vol. I). If the male needed it, "the community" assisted him. See above authorities, and others.

The controlling influence of the *Kin*, in matters of marriage, was officially recognized, as late as 1555, by the first provincial "concile" held at Mexico in that year. It was ordained: "That since it is customary among the Indians Maceguales not to marry without permission ("licencia") of their principals, nor to take any women, unless it

ritual details themselves, but we must lay particular stress on the fact, that the wife became the *property* of her husband and that she was, as such, placed under the direct protection of his kinsmen. Such marriages could be annulled by mutual consent, provided the kin gave its approbation. In such a case the woman was at liberty to marry again, and also to return to the calpulli from which she issued.¹¹⁰

We might now be expected to cast a glance at the funeral rites of the ancient Mexicans since it was *one of the attributes of the kin to enjoy common burial*.¹¹¹ But this question is so intimately connected with that of creed and belief that we refrain from trespassing too much on that field. The Mexicans practised cremation and, in the case of warriors slain in battle, at least, it is known that the exercises were conducted by the officers and leaders of each kin, *all its members*, and not the special relatives and friends only of the deceased, attending the ceremony.¹¹² Our knowledge of the burial places of aboriginal Mexico is still very indef-

was given by their hand, out of which there arise great discomforts, and marriage among free persons is not as free as it should be, therefore, we ordain and command: that no Indian principal of whichever condition or rank ("estado") shall of his own accord or authority give away any wife to anybody whatsoever, nor shall he prevent any Macegual from marrying freely the woman whom he may wish, and who may like him,—under penalty of thirty days of imprisonment, and other penalties which the Judge may determine upon."

("Concilios Provinciales, Primero y Segundo, celebrados por la muy noble, y muy Leal ciudad de México etc., etc. Dados á Luz el 11^{mo} Sr. D. Francisco Antonio Lorenzana Arzobispo de esta Santa Metropolitana Iglesia Año de 1769). The "principales Indios" are the officers of the "Kins," and thus we have, thirty five years after the conquest, a formal recognition of the custom among the Mexican Indians that marriage was controlled by the Kin. How the "encomenderos" subsequently interfered with that custom, in order to conceal their own criminal doings, is plainly told by Fray Antonio de Remesal "Historia de la Provincia de San Vicente de Chyapa y Guatemala, etc., etc." Madrid, 1619 (Lib. VII, cap. XV, p. 327).

¹¹⁰ It is singular that some of the earliest ecclesiastical writers imply that there was no rule of repudiation or divorce among the ancient Mexicans. *Mendieta* (Lib. III, cap. XLVIII, p. 308). The same authority, however, attributes this to the baneful effects of contact with the Spaniards, in consequence of which the customs of the natives grew more or less dissolute and immoral (p. 304). *Zurita* (p. 97) confirms, and *Torquemada* (Lib. XVI, cap. XXIV, p. 196), copies *Mendieta* literally. For the customs of divorce see *Zurita* (p. 97), *Mendieta* (Lib. III, cap. XLVIII, p. 304), *Torquemada* (Lib. XIII, cap. XV, pp. 441 and 442), *Gomara* (Vedia I, p. 440), *Herrera* (Dec. III, Lib. II, cap. C, XVII, pp. 72 and 73), *Bustamante* ("Tezcoco," p. 196), and others. The division of property mentioned as accompanying the divorce, applies only to personal effects, since the wife brought nothing else. See "Tenure of Lands" (p. 429, and note 107).

The matrimonial customs of the ancient Mexicans will be more thoroughly discussed by me in another monograph, subsequent to one on "Religious Beliefs."

¹¹¹ "Ancient Society" (pp. 71 and 83).

¹¹² Compare *Durán* (Cap. XVIII, pp. 154 and 156), and *Texozomoc* (Cap. XXV, pp. 37 and 38).

nite, owing, in part, to the treasure-seeking propensities of the Spanish immigrants as well as to the diligence of the clergy in obliterating all objects to which the aborigines attached superstitious notions.

For the same reason we refrain here from entering into a detailed account of the customs of worship. Still we feel obliged to state that the feature of "separate religious rites"¹¹³ so characteristic of society based upon kin, is plainly visible among the ancient Mexicans. There are some very remarkable evidences of this, to which we must allude.

It has already been established at the outset, that each *calpulli* had "its particular god," which was worshipped, as a tutelar deity, within the territory of that *calpulli*. Consequently each kin had its particular medicine-lodge or temple.¹¹⁴ Besides, the last one of the seventy-eight places into which Father Sahagun subdivides the great central "teo-calli" of the tribe, is described by him as follows:

"The seventy-eighth edifice was named *calpulli*, these were small buildings enclosing the inside of the square, these little houses they called *calpulli*, and there the principals and officials of the republic gathered, to do penance for four days preceding each festival occurring at twenty days interval. Their vigils thus lasted four days, during which time some of them ate at midnight and others at noon."¹¹⁵

This statement, which is confirmed (according to the learned Jesuit John Eusebius Nieremberg)¹¹⁶ by the celebrated physician and naturalist Francisco Hernandez, is followed by another one, not less important, also of Sahagun:

"They offered up many things in the houses which they called 'calpulli,' which were like churches of the quarters, where those of the same gathered, as well for to sacrifice, as for other ceremonies they were wont to perform."¹¹⁷

Thus the right of the kin to "separate worship" appears not

¹¹³ "Ancient Society" (p. 71).

¹¹⁴ Besides the positive assertions of *Sahagun* (Lib. II, Appendix, p. 211. Lib. I, cap. XIX, p. 31): "se ponian en una de las casas de oracion que tenian en los barrios que ellos llamaban *calpulli*, que quiere decir iglesia del barrio ó parroquia" and (Lib. II, cap. XXXVII, etc.), we have also the testimony of *Durán* (Cap. V, pp. 42 and 43, and Cap. IX, pp. 79 and 80), and *Oviedo* (Lib. XXXIII, cap. X, p. 302).

¹¹⁵ "Historia general," (Lib. II, Appendix, p. 211).

¹¹⁶ "Historia natural," (Lib. VIII, cap. XXII, p. 146).

¹¹⁷ "Historia general," (Lib. II, Appendix, p. 211. See note 114).

only established within that kin's territory, but it is also recognized even at the central medicine-lodge of the tribe.

A further evidence of it is found in the manner of distribution of the captives, upon the return of a successful war-party. It is known that prisoners were always offered up to the idols. Such a person, therefore, as soon as secured, became an object of "medicine;" he was so to say a sacred object. Well treated as long as he was not needed for the slaughter-block, nothing could in the end save him from sacrifice. But this sacrifice itself was not made in behalf of his captor, but on behalf and for the kin to whom the captor belonged. Therefore upon arrival at the pueblo, the prisoners of war were turned over to the respective calpulli as their share thus furnishing another illustration of "Separate Rites of Worship" of the kins composing the ancient Mexicans.¹¹⁸

Having already discussed, in a former paper, the *tenure of Lands and customs of Inheritance*¹¹⁹ we now pass on to one of the most essential features of tribal society, and one which involves some of the vital points of organization and customs.

*The kin was obligated to protect and defend the persons and property of its members, and to resent and punish any injury done to them, as if it were a crime committed against the kin itself.*¹²⁰

The impression justly prevails, that the so-called "penal code" of the Mexicans was simple but severe, death being, in most instances, the punishment of offenders. This resulted, in a great measure, from the fact that any offence against an individual

¹¹⁸ *Mendieta* (Lib. II, cap. XXVII, p. 183), rather contradicts himself when he says first: that the captive belonged to his captor, but at the same time, that this captor was even killed if he gave away his prisoner to another man. Second: that each one had to watch his own prisoners, and at the same time they were guarded in common, and at the risk of the "barrio" or kin, which was responsible for their safe keeping. *Torquemada* (Lib. XIV, cap. III, p. 540) copies this almost literally. Much more positive and clear is *Durán* (Cap. XIX, pp. 172 and 173): "mandó Tlacaelel repartir los cautivos, porque eran muchos, por todos los barrios y que cada barrio se encargase de guardar y sustentar tantos Los mandones de los barrios repartieron los presos á cada barrio, á como les caia." (Cap. XXI, p. 188): "Montecuma los mandava vestir y adereçar y llamauava á los Calpixques, que son los mandoncillos de los barrios, y entregauanlas, para que tuviesen cuidado dellos, diciendo que eran la merced del sol, Señor de la tierra, que los daua para el sacrificio." (Id., cap. XXII, p. 192. Cap. XXVIII, p. 237): "luego fuéron repartidos entre los barrios y encomendados á los mandoncillos." (Cap. XLII, p. 343, etc.). *Texozomoc* ("Cronica," cap. XXIX, p. 45; XXXII, p. 51; XXXIII, p. 53; XXXVIII, p. 61; XLIX, p. 80, etc.), confirms *Durán* as might be expected.

¹¹⁹ "Tenure of Lands and Customs of Inheritance," 11th Report of Peabody Museum, 1878.

¹²⁰ "Ancient Society," (pp. 76 and 77). Compare *H. Luden* ("Geschichte des deutschen Volkes," pp. 501 and 502), among the ancient Germans.

became, according to rules of kinship, one against the social group to which he belonged. This presupposes again a general division of crimes into two classes, one of which includes such as were committed by members of the kin against other members thereof or against institutions of the same group to which they belonged. The other comprises offenses committed by inhabitants of one *calpulli* against those of another. It is only the first class which we take under consideration here, the second we reserve for our discussion of the mode of government. Crimes committed within the kin can be classified as against persons, against property, and against medicine.

The aborigines of Mexico are generally represented as being, in their every-day's intercourse, of a quiet, peaceable, inoffensive disposition, contrasting strongly with their savage ferocity in warfare. This was not however due to any innate gentleness and mildness of nature, but only to the peculiar restraint enforced upon them by the law of retaliation or revenge.¹²¹ Brawls resulting in bodily injury were therefore of extremely rare occurrence, and then it was left to the parties to settle it among themselves. In such cases, as in the event of mutual jealousy, a challenge often passed between them, and this challenge brought about an encounter at the next campaign when, while the warriors were engaged with the enemies of the tribe, the contestants fought as if they had belonged to opposite camps, until one of them

¹²¹ The character of the Mexican Aborigines is variously depicted by older writers. It appears as a mixture of childlike docility and fierce passions. Cortés ("Carta Segunda," p. 18. Vedia, Vol. I.) speaks of them according to the reports of the Tlaxcaltecan. Bernal Díaz ("Historia etc.," pp. 309 and 310. Cap. CCVIII. Vedia II.) specially dwells on their vices and their cruelty, as evidenced in their sacrifices. "El Conquistador Anónimo" (Col. de Docum., I, pp. 371, 383, 387, and 397), places great stress on their ferocity, although he also says that they are very obedient. The missionaries generally exalt their good sides—their docility and faithfulness. Compare Motolinia (Trat. I, cap. XIV, pp. 76 and 77). The same (Trat. I, cap. II, pp. 22 and 23), mentions, however, their vices also, attributing nearly all of them (idolatry excepted), to their inclination towards intemperance. (Trat. II, cap. IV, p. 113): "Lo que de esta generacion se puede decir es, que son muy extranos de nuestra condicion . . ." Zurita (p. 197—207), is very bitter against such as treat the Indians as barbarians. (Id., 42 and 45). Mendieta (Lib. III, cap. XLIII, p. 290), says that they were very willing to forgive and ask to be forgiven, the latter taking place, before going to confess themselves, sometimes before all the relationship and the neighbors: "suelen algunos juntar (al tiempo que se quieren confesar) toda su parentela y vecinos con quien comunican, y pedirles perdon en la manera dicha." Against this, it is reported by Torquemada (Lib. XIV, cap. I, p. 535), that "these people were naturally more vindictive, than all the rest of the world." Compare also the descriptions of the character of the Mexicans in Clavigero (Lib. I, cap. XV).

was disabled or until he voluntarily withdrew.¹²² Slanderers, however, were punished by the kin, having their lips cut off or publicly sliced.¹²³ Homicide, and murder, were invariably punished by death.¹²⁴

Intemperance in public was free to people more than seventy years old, while if grown men below that age appeared in a drunken state (festivities excepted), their heads were shorn clean in punishment. But whenever the delinquent was a chief he was publicly degraded; and any officer was forthwith removed and relieved of his duties.¹²⁵ Women who attempted to act as

¹²² Gomara (Vedia I, p. 440): "no traen armas sino en la guerra, y allí averiguan sus pendencias por desafíos." Bartolomé de las Casas ("Historia apologética de Indias," cap. 213 and 214. Vol. VIII of Lord Kingsborough, note XLV, p. 124). Bystanders interfered, separating the parties, if they came to blows. Motolinía (Trat. I, cap. II, p. 23), says that such strife and quarrels only occurred when they were drunk: "Y fuera de estar beodos son tan pacíficos, que cuando ríen mucho se empujan uno á otro, y apenas nunca dan voces, si no es las mugeres que algunos veces ríendo dan gritos." (Cap. XIV, p. 76): "Sin rencillos ni enemistades pasan su vida." Torquemada (Lib. XII, cap. XV, pp. 398 and 399). Herrera (Dec. III, Lib. IV, cap. XVI, p. 136).

¹²³ Zurita ("Rapport," etc., pp. 129 and 130) speaks only of children, punished by splitting the lips for lying. This is copied by Herrera (Dec. III, Lib. IV, cap. XVI, p. 136) and Torquemada (Lib. XIII, cap. XXX, p. 478). Velancurt (Part II, Trat. III, p. 483), however, declares this punishment to have been meted out to adults, adding: "to-day there would be many without lips, so much do they lie." Gomara ("Conquista," p. 436, Vedia I) speaks of this punishment as having been instituted by Quetzalcohuatl, and for adults as well as for children. This, attributing it to Quetzalcohuatl, is an evident error. Compare Sahagun, (Lib. III, cap. III, p. 244). Clavigero (Lib. VII, cap. XVII, p. 489) is positive about adults. Bustamante ("Tezoco," p. 195) says that slanderers were killed.

¹²⁴ Las Casas ("Historia Apologética," cap. 213, Kingsb: Vol. VIII, p. 123): Destos era el que mataba á otro, el cual moria por ello." Gomara (Vedia I, p. 443): "Matan al matador sin excepcion ninguna." Mendieta (Lib. II, cap. XXIX, p. 134): "Sentenciaban á muerte á los que cometian enormes y graves delitos, así como á los homicidas. El que mataba á otro, moria por ello." Torquemada (Lib. XII, cap. VIII, p. 387), almost copies the preceding. Nearly all the authors agree on this point, except, according to Mr. Bancroft ("Native Races," Vol. II, p. 489, note 59), Durán, who is said to assert: "that the murderer did not suffer death, but became the slave for life of the wife or relatives of the deceased." In this Durán agrees with the "Codice Ramirez." Velancurt ("Teatro," Vol. I, p. 485) says that even for murder committed in a drunken state, the culprit was killed (hung). Clavigero (Lib. VII, cap. XVII, p. 484) briefly states that all homicide was punished with death. As to the manner of execution, it is variously stated. It would be unsafe to attempt going into details.

¹²⁵ It is well known that there was an idol for the drunkards. Sahagun (Lib. I, cap. XXII, p. 40) even gives the names of thirteen "dioses del vino." According to Gregorio García ("Origen de los Indios," etc. Lib. III, cap. II, §VI, p. 92, who mentions as authority Fray Estevan de Salazar, "Historia, y Relacion de la Teologia de los Indios Mexicanos" lost in a shipwreck, 1564), they had three hundred gods of the drunkards "que de solos los borrachos tienen 300 Dioses." See also Torquemada (Lib. VI, cap. XXIX, p. 58) and others. The punishments are given by me after Mendieta (Lib. II, cap. XXX, pp. 139 and 140). Copied textually by Torquemada (Lib. XIV, cap. X, p. 650). Besides these, Zurita (pp. 110-113) asserts the same, even more explicitly, and he is followed by Herrera (Dec. III, Lib. IV, cap. XVI, p. 136). Velancurt (Vol. I, p. 483). Clavigero (Lib.

procuresses were severely punished, though not with loss of life.¹²⁶

While clandestine relations between young men and girls were known to exist and, if not sanctioned, still were not punished,¹²⁷ it was different if a married man attempted to seduce a maiden who was not an outcast. The seducer was invariably punished.¹²⁸ Intercourse between unmarried people was tolerated, as a preliminary to marriage and the consequent increase of kinship, but if a husband, in contravention of the obligation "not to marry in the kin," endeavored to satisfy his lusts upon one of that kin's wards, as the daughters of members all were, then he committed

VII, cap. XVII, p. 486). all affirm, besides, that young people, while yet in care of the "houses of training," if intoxicated, were killed. This is also confirmed by *Sahagun* (Lib. III, appendix, cap. VI, pp. 270 and 271). Except by *Motolinia* (Trat. I, cap. II, pp. 22 and 23), it is generally conceded that drunkenness was well controlled in aboriginal Mexico.

¹²⁶ Although prostitution was tolerated, still, houses of ill-fame did not exist. *Torquemada* (Lib. XII, cap. II, p. 376): "Esto parece, porque permitieron, que huviese Mujeres, que se daban à los que querian, y se andaba à esta vida suelta, y gananciosa, como las de nuestra España, y otros Reinos; puesto que no tenían cara señalada, ni publica para la execucion de su mal oficio, sino que cada qual moraba donde le parecia, y el acto deshonesto, en que se ocupaba, servia de lugar publico, y en el mismo vicio se hacia publica y se manifestaba." *Vetancurt* (Vol. I, p. 480): "Permitian los mexicanos, mujeres que ganasen con sus cuerpos, aunque no tenían lugares señalados." It is, therefore, not quite clear what may be meant by the term "alcahueta." In the sense of the French word "entremetteuse," alone, they were amenable to punishment, since it was the duty of the man to hunt his "female," although he sometimes employed women called "chuantlanqui" for that purpose. I suppose that such women were punished, not for the immorality of their conduct, but for their unauthorized forwardness in addressing themselves to men, and thus trespassing upon the dignity of that superior being. In regard to authorities on the mode of punishment, I but refer to those quoted by *Mr. H. H. Bancroft* (Vol. II, p. 469, note 101).

¹²⁷ I have already shown that young people held intimate relations with each other before the formalities of marriage were arranged. Thus, while he was yet at the "Telpuchcalli," the youth had his female friend, "amiga" or "manceba," outside. This is positively stated by *Sahagun* (Lib. III, appendix, cap. VI, p. 271): "y estos mancebos tenían sus amigas cada uno dos ó tres, la una tenían en su casa, y las otras estaban en las de sus familias." and *Torquemada* (Lib. XII, cap. III, p. 376). That these female "friends" were regarded with more than a feeling of platonic love, is clearly expressed by *Sahagun* (Id: cap. V, p. 270): "y los que eran amancebados ibanse à dormir con sus amigas." It is also asserted by *Torquemada* (see above): "que despues que aquel mancebo havia un Hijo, en la dicha manceba, luego le era forcoso, ó dejarla, ó recibirla por muger legitima." *Vetancurt* (Vol. I, p. 480): "los mancebos antes de casarse tenían sus mancebas, y solian pedirlas à las madres." This almost establishes promiscuity among the ancient Mexicans, as a preliminary to formal marriage.

¹²⁸ *Clarigero* (Lib. VII, cap. XVII, p. 485) says that the punishment was not like that of the adulterer, "because the husband was not required to the same amount of conjugal fidelity as the wife." With "slaves" concubinage was permitted, and the result of childbirth was freedom to the child. Death was invariably the punishment of those who held, or attempted to hold, intercourse with girls in care of the house of worship. *Zurita* (p. 108, etc.). *Mendieta* (Lib. II, cap. XXIX, p. 136): "El que hazia fuerza à virgen, ora fuese en el campo, ora en casa del padre moria por ello."

a crime which the calpulli was bound to punish in the most exemplary manner.

While we are not at all surprised at such severity in the cases above stated, it cannot fail to astonish us, that such apparently harmless acts as those of a *man wearing female dress* and of a *woman appearing in male attire* were visited upon the offenders with death.¹²⁹ Still, the ancient Mexicans could assign from their peculiar point of departure good cause for such cruel punishments. The position of woman was so inferior, they were regarded as so far beneath the male, that the most degrading epithet that could be applied to any Mexican, aside from calling him a dog, was that of "woman." It was more injurious than coward. Now, for a man to assume the garb of such an inferior being became almost equivalent to a crime against nature. It was an act of wilful degradation which was a deadly insult to his own kin. On the other hand, if a woman presumed to don the dress of her lord and master, it again was a crime of an equally heinous nature. In both cases the dignity of the whole consanguine group became deeply affected, and death alone could satisfy its honor. After this, it is needless to say how the actual crimes against nature were regarded and punished.¹³⁰

It was also a capital crime for any man, to assume the dress or ornaments peculiar to an office, without being himself that office's lawful incumbent. Besides being a grave insult to the rightful officer, it was a dangerous offence towards the kin, especially in case of war, when it amounted to actual treason.¹³¹

Since it was the kin's duty to protect, not only the persons, but also the property of its members, it follows that adultery committed with a married woman entailed deadly punishment upon the male, whether he was married or not. His crime was that of stealing the most precious chattel of one member of the calpulli.

¹²⁹ This is so generally mentioned by all authors, that special references are superfluous.

¹³⁰ All authors insist that incest was punished with death. *Torquemada* (Lib. XII, cap. IV, p. 380): "Todos los que cometian Incesto en el primer grado de consanguinidad, tenian pena de muerte, si no eran cuñados, y cuñadas." *Mendieta* (Lib. II, cap. XXI, p. 137). *Vetancurt* (Vol. I, p. 481). All these authors appear to have gathered their information from the same source, or rather *Torquemada* is frequently *Mendieta's* plagiarist, while *Vetancurt* often copies *Torquemada*. To avoid superfluous quotation, I beg to refer, on the subject of "unnatural crimes," to *Bancroft* (Vol. II, pp. 466, 467 and 468, "Native Races").

¹³¹ *Mendieta* (Lib. II, cap. XXVII, p. 132), copied by *Torquemada* (Lib. XIV, cap. III, p. 540), *Durán* (Cap. XXVI, pp. 214, 215 and 216), and others.

The woman, as participant in the offence, was also killed. Both were executed in public.¹³² Theft of objects was variously punished. If the article was of small value and could be returned, its restitution settled the matter;¹³³ but if it were of greater value and could not be returned, then the thief became "bondsmen" to the injured owner or even suffered death for his crime.¹³⁴ The

¹³² If, however, the husband killed the wife himself, even if he caught her *flagrante delicto*, he lost his own life. This shows clearly, that the crime was considered as one not so much against the man, as against the cluster of kindred to which he belonged, and they were consequently not only bound but entitled to avenge it. Evidence of this punishment of the injured husband in case he avenged himself, is found in many authors. See *Mendieta* (Lib. II, cap. XXIX, p. 138), *Torquemada* (Lib. XII, cap. IV, p. 378), *Clavigero* (Lib. VII, cap. XVII, p. 484), and *H. H. Bancroft* (Vol. II, p. 465).

In strange contrast with the frequent assertions of the high-handed manner in which the chiefs are said to have used, at their will and good pleasure, the women of the land, as for instance in *Gomara* (Vedia I, pp. 438 and 439), *Motolinia* (Trat. II, cap. VII, p. 125) and others, we find it positively stated that adultery and rape were severely punished even in the case of the highest officers and chieftains. Thus, the case of the chief of Tlaxcallan, who was executed for adultery, is related with full details by *Las Casas* ("Hist. apologética," Cap. 213, in Vol. VIII, of Kingsborough, p. 123), *Zurita* (pp. 107 and 108), *Torquemada* (Lib. XII, cap. XV, p. 390). Another story of a son of the chief of Tezcuco, killed for intercourse with girls then in the houses of worship, is also fully given. *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XLIV, pp. 315-320), *Torquemada* (Lib. II, cap. LXV, p. 180), etc. These are strange contradictions and are, sometimes, found even between fact and fact as told by the same author.

¹³³ *Gomara* (Vedia I, p. 442), says: "El ladrón era esclavo por el primer hurto," but this is not sustained by others, in the case of small thefts. For instance, *Mendieta* (Lib. II, cap. XXIX, p. 138): "El ladrón que hurtaba hurto notable, . . . por la primera vez era hecho esclavo." *Torquemada* (Lib. XII, cap. V, p. 381), but especially (Lib. XII, cap. XXI, p. 364): "Al que hurtaba pequeños hurtos, si no eran muy frequentados, con pagar lo que hurtaba hacia pago." *Clavigero* (Lib. VII, cap. XVII).

¹³⁴ The statements are positive to that effect. *Mendieta* (Lib. II, cap. XXIX, p. 138), *Torquemada* (Lib. XII, cap. V, p. 381), *Vetancurt* (Vol. I, p. 483). "Anónimo" (Col. de Doc.: I, p. 383) exaggerates. "De l'ordre de Succession observé par les Indiens" Mr. Ternaux Compans' translation of a Simancas MSS., (1st Recueil, p. 228) confirms the "anonymous." *Fr. Francisco de Bologna* ("Lettre au R. P. Clément de Montélie," 1st Recueil, p. 211): "Ils n'étaient pas très cruels dans les punitions qu'ils infligeaient aux coupables." *Gabriel de Chaves* ("Rapport sur la province de Mexitlan," French translation by Mr. Ternaux, 2d Recueil, p. 312,—original held by Sr. Icazbalceta). *Herrera* (Dec. III, lib. IV, cap. VII, p. 121), about Nicaragua: "Cortaban los Cabellos al Ladrón, i quedaba Esclavo del Dueño de lo hurtado, hasta que pagase." (Lib. III, cap. XV, p. 101), at Izcatlan: "con los bienes del Ladrón, despues de justiciado, satisfacia al agraviado. *Ixtlilxochitl* ("Histoire des Chichimèques," Cap. XXXVIII, p. 268): "Celui qui volait dans les villages ou dans les maisons devenait l'esclave du volé, quand il n'avait pas commis d'effraction. et que le vol était de peu d'importance; dans le cas contraire il était pendu." *C. Ortega* (Appendix to Veytia, Vol. III, p. 225): "Casi siempre se castigaba con pena de muerte, á menos de que la parte ofendida conviniese en ser indemnizada por el ladrón. También tenía el ladrón la pena de ser esclavo del dueño de lo que robaba; y si este no lo quería, era vendido por los jueces, y con su precio se pagaba el robo." *Bustamante* ("Tezcoco," Parte IIIa, cap. I, p. 197).

Several of the authors above quoted, relate the well known tale about "wrathful chief" (Montezuma) picking some ears of corn in a gardenplot, for which he was ap-

duration of this bond, whether for certain time or for life, is not stated. If any one changed the limits (lines) of the individual lots ("talmilpa"), or of the official tracts, he lost his life. His offence was not so much against the occupant as against the kin, who had fixed the destination of each particular plot of land, and determined its boundaries.¹³⁵ It is also mentioned that "he who squandered the property of minors left to his care" suffered death for it. The case could only be that of an oldest son, or of a father's brother, in whose care the "tlalmilli" improved by the deceased was left, to be improved for the benefit of the latter's children. If now this warden failed to have that lot tilled for two years, it became lost to his wards, who were thereby left without means of subsistence. There was no restitution possible, therefore the negligent administrator paid with his life for the neglect.¹³⁶

In general, we discern the ruling principle: that for theft there were but two ways of atonement. One consisted in the return of the stolen property, and if that was no longer possible, then the person of the thief had to suffer for it. Wherever no bodily labor could replace the value of the loss (as in the last case mentioned) the life of the criminal became forfeited to the kin, since the sufferers looked to that cluster for redress.¹³⁷ This carries us

prehended by its owner or at least occupant. This story shows, that no chief was exempt from punishment even for slight misdemeanors.

I refer to *Torquemada* (Lib. XIV, cap. XXI, p. 504), *Velancurt* ("Teatro," Vol. I, p. 483), *Bustamante* ("Texcoco," p. 197) for the assertion that the kin of the thief assisted him in discharging the penalty for his crime. The former says: "y si no tenia de que pagar, una, y dos veces, los parientes se juntaban, y repartian entre si el valor del hurto, y pagaban por el, diez, y doce mantas, y desde arriba: ni es de créer, que hacian Esclavo por quarenta, ni cinquenta masorcas de malz, ni por otra cosa de mas precio, si él tenia de que pagar, ó los Parientes." On this important point—the solidarity of the kindred in the case of the crime of one of their number, see, further on, note 137.

¹³⁵ To the authorities so frequently quoted on other subjects, I will add here *Ixtlilxochitl* ("Relaciones históricas," Vol. IX, Lord Kingsborough, p. 387).

¹³⁶ *Torquemada* (Lib. XII, cap. VII, p. 385) calls this an "extravagant law." Further quotations useless.

¹³⁷ It is stated by *A. de Velancurt* ("Teatro Mexicano, Vol. I, p. 483): "En los hurtos era ley general que siendo cosa de valor tenian pena de muerte; y si la parte se convenia, pagaba en mantas la cantidad al dueño, y otra mas para el fisco real; á esto acudian los parientes." This "obligation to help" on the part of the kin we have already met with in the case of marriage, where the kin assisted the newly married couple. (See *Zurita*, "Rapport," p. 132): "Si le jeune homme était pauvre, la communauté où il avait été élevé l'aidait." We find it subsisting after the conquest, as when an Indian died, leaving debts, his kinship paid them for his estate (which in most cases was insolvent), or "worked it out for him." This is asserted as follows by *Fray Agustín Davilla Padilla* ("Historia de la Fundación y Discurso de la Provincia de

to a class of thefts and other similar offenses, committed against worship or "medicine."

Any attempt at seduction of a female who had taken the pledge of chastity in behalf of medicine, was most cruelly punished, both in the persons of the seducer and the female; and if a medicine-man broke his vows, he suffered a horrible death.¹³⁸

We have already mentioned that it was a capital crime on the part of a warrior to take for himself a prisoner of war secured by another.¹³⁹ Such cases occurred only during an engagement or immediately after it. Why an action of that kind should entail so rigorous a punishment can be easily inferred, if we recollect that a captive of that kind became at once sacred — an object of medicine. No return could atone for the offence, since it had been committed against the "rites of worship," one of the kin's most sacred and important attributes. Under the same head must be placed the capital punishment of such as wrongfully appropriated to themselves gold or silver. Both of these metals were regarded as objects of medicine, and whoever seized them unlawfully, committed a crime against worship also.¹⁴⁰

Santiago de México, 2d Edition, 1825, Lib. I, cap. XXVI, p. 83): "Si muere alguno dellos con deudas, como si los deudos las heredassen por parecerse deudas y deudas en el nombre, procuran luego entre los parientes pagarlas, porque el anima de su difunto no dilate la entrada en el cielo. Y si no tienen caudal para pagar, procuran que se perdone la deuda, y sino salen con esta traça, se dan luego todos en servicio al acreedor hasta que del todo se pague lo que el difunto devia. Viviendo yo en el colegio de San Luys de predicadores el año de 1583, sucedió morir un Indio que trabajava en aquel sumptuoso edificio, y era muy diestro cantero; auia recibido dineros adelantados, y quando murió quedava deviendo veynete pesos, ó reales de á ocho. Vinieron luego al colegio los parientes reconociendo la deuda, y pidiendo que los ocupasen en servicio del colegio, para que se descontasse lo que su difunto devia. No se les daua mucho a los padres del colegio por cobrar estos dineros; porque demas de ser pocos no parecia que auia modo para cobrarlos; y mas por acudir á la devocion de los deudos, le dixeron á uno, que viniesse á trabajar en la huerta. Era maravilloso el cuydado del Indio, asi en venir cada dia, como en venir muy de mañana; y preguntandole un religioso la causa de su cuydado, dixo, que le tenia porque un pariente se fuesse al cielo, y desde alla le ayudasse con Dios, y no estoviesse en el infierno chiquito, que los predicadores llaman purgatorio."

My friend Col. F. Hecker, to whom I communicated the above, at once recognized in it an analogue to the ancient Teutonic "*Gesammt-Burgschaft*." He called my attention to the remarkable organization of the Germans. Compare *Luden* ("*Geschichte*," etc., Vol. I, p. 502), which valuable source I also owe to the kindness of the distinguished German jurist.

¹³⁸ In regard to "priests" it is also stated that they were merely degraded and cast away; but this is hardly probable since, the higher the position of the culprit, the severer was his punishment.

¹³⁹ Compare also *H. H. Bancroft* (Vol. II, p. 419). *Prescott* ("*Conquest*," Book I, chapter II, p. 47).

¹⁴⁰ *Mendieta* (Lib. II, cap. XXIX, p. 138). *Vétancurt* (Vol. I, p. 484): "Al que hurtaba

In the above review of those offences and their punishments, immediately connected with that rule of tribal society which places the persons and property of the members of a kin under that kin's special protection, we cannot pretend to have furnished more than illustrations, and not at all a full catalogue. Still, enough has been told, we believe, to explain what is frequently styled the "penal code" of the ancient Mexicans. It is well known, that no actual written laws existed, but on the other hand, at the time of the Spanish conquest, the natives still had a large number of paintings which represented their own manners and customs. Since a considerable proportion of these picture-leaves bore on the same subjects, the inference could be easily drawn that they indicated forms for the guidance of the people, or in other words, that they were a substitute for a written code. This was not at all their object. They were simply efforts of native art intended to represent scenes of everyday life, since these were the most handy subjects for such purposes. Therefore such pictures are to be regarded as convenient remains of aboriginal art, out of which many details concerning aboriginal customs may be gathered, but not as "official" sources, from which to seek information as to the "law of the land."¹⁴¹

plata y oro lo desollaban vivo y sacrificaban al dios de los plateros, que llamaban Xipe, y lo sacaban por las calles para escarmiento de otros, por ser el delitto contra el dios fingido." This sacrifice to one particular Idol, however, is neither mentioned by Torquemada nor by his predecessor and main source, Mendieta. *Clavigero* (Lib. VII, cap. XVII, p. 487) copies Vetancurt almost textually. So does *Ortega* (Vol. III, p. 225, Appendix to *Veytia's "Hist. Antigua"*). *Bustamante* ("Tescoco," p. 198) copies the former again. Still it is singular that the older the source, that is, the nearer in date to the time of the conquest, the less positive it is on the point of sacrifice. It will be safe to admit that the criminal was killed for a crime committed against worship, without insisting upon a particular place or mode of punishment.

¹⁴¹ Elsewhere ("On the Sources for Aboriginal History of Spanish America," in Vol. XXVII of the "Proceedings of the American Association for Advancement of Science," 1878) I have attempted a discussion of the nature of Mexican paintings, and of their value as sources of history. I will add here but two positive declarations, on the subjects of the paintings, which I had not noticed at the time the above paper was read at St. Louis, Missouri, Aug., 1878. *Juan de Solorzano-Pereyra* ("Disputationem de Indiarum Jure," 1629, Vol. I, Lib. II, cap. VIII, p. 331, § 98): "Quod de Phœnicibus tradit etiam Lucanus. et in Mexicanis nostris experti sumus, qui si non litteris, imaginibus tamen, et figuris ea omnia, quæ sibi memoranda videbantur, significabant, et conservabant." The other is of recent date, being taken from a discourse delivered before the "Academia Mexicana," by my friend Señor D. J. G. Icazbalceta ("Las Bibliotecas de Eguiaza y de Beristain," p. 253 of No. 4. Vol. I, of "Memorias de la Academia"): "El antiguo pueblo que ocupaba este suelo no conocia las letras, y con eso está dicho que no podia tener escritores ni literatura. Su imperfectísimo sistema de representar los objetos é ideas, tenia que limitarse á satisfacer, hasta donde podia, las necesidades más urgentes de la sociedad, sin aspirar á otra cosa. Así es que no se empleaba sino en registrar los tributos de los pueblos, en señalar los limites de las

In this rapid sketch, we have failed to find, among aboriginal modes of punishment, two which were common to almost every nation of the old world, namely: whipping, and imprisonment.

Whipping, beating, or lashing was, among the Mexicans as well as amongst all American natives, known only as a *deadly insult*. It is nevertheless true that the Mendoza Codex contains pictures representing a Mexican father who applies to a son the rod of punishment.¹⁴² Again, the candidate for the office of chief had to endure beating¹⁴³ along with the other sufferings incident to his time of trial. But no "bondsman" was ever whipped or flogged, neither was a criminal subjected to this degrading penalty, for which death would have been a thousand times preferable.¹⁴⁴

The Mexicans had places of confinement—dark and gloomy recesses with entrances compared to "pigeon-holes."¹⁴⁵ Every official building, and also the places of worship contained them. They were called: "place of the taken one," "teipiloyan;"¹⁴⁶ "place of entombment or confinement," "Tecalzaqualoyan,"¹⁴⁷ and "house of wood," Quauhcalli."¹⁴⁸ The latter, which is particularly described as a wooden cage placed within a dark chamber, was reserved for those whose doom was sealed, whether they were criminals sentenced to immediate execution, or captives to

heredades. en recordar las ceremonias de la religion. y en contribuir á conservar la memoria de los sucesos más notables, que aun con ese auxilio habria perecido, á no perpetuarse en las tradiciones recogidas por los primeros predicadores del Evangelio."

¹⁴² *"Mendoza Codex"* (Kingborough, Vol. I, plates LX, part 3), the boy being nine years old.

¹⁴³ *Mendieta* (Lib. II, cap. XXXVIII, p. 157). *Torquemada* (Lib. XI, cap. XXIX, p. 362). *Clavigero* (Lib. VII, cap. XIII, p. 472), etc., etc.

¹⁴⁴ It was no dishonor to suffer tortures, but whipping was a deadly insult, as among other Indians.

¹⁴⁵ *Mendieta* (Lib. II, cap. XXIX, p. 138): "Tenian las cárceles dentro de una casa oscura y de poca claridad, y en ella hacian su jaula ó jaulas; y la puerta de la casa que era pequeña como puerto de palomar, cerrada por defuera con tablas, y arimadas grandes piedras." *Torquemada* (Lib. XI, cap. XXV, p. 353).

¹⁴⁶ *Molina* (II, p. 94), "teipil"—el que prende o encarcela a otro—"teipiliztli" "prendimiento tal." (Id. I, p. 98). "prender" "niteyilia." Among the 78 edífices of the great central place of worship. *Sahagun* (Lib. II, Appendix, p. 210) mentions one place "Aratlayiacapan Veicalpulli" "esta era una casa donde juntaban los esclavos que habian de matar á honra de los Tlaloques." (Id., Lib. VIII, cap. XV, p. 304. Cap. XXI, p. 309) mentions "jails" in connection with the official house or "tecpan." That the different calpulli or "barrios" had each its places of confinement is noticed by *Durán* (Cap. XXI, p. 187): "Los calpixques los reuculan y los ponian en las casas de sus comunidades ó del sacerdote de tal barrio."

¹⁴⁷ *Molina* (II, p. 91): "Tecalli" a vault, "casa de bóveda." Since the Mexicans had no arches. It meant actually a tomb.

¹⁴⁸ *Molina* (II, p. 86): "Jaula grande de palo, adonde estauan los presos por sus delitos."

be sacrificed forthwith.¹⁴⁹ The two former kinds of prisons were used for lighter degrees of offenders. At any rate they were but temporary places of detention, for any prisoner left there for any length of time invariably died of hunger, filth, and bad air. Permanent confinement simply meant death.¹⁵⁰

The execution of all these penalties necessarily presupposed for the kin a regulated administration. It therefore leads us to the governmental machinery proper of the calpulli. The nature of this government is expressed by the following rule of kinship, already found in vigor among more northern Indians.

*The kin had the right to elect its officers, as well as the right to remove or depose them for misbehavior.*¹⁵¹

This at once establishes the calpulli, as we have already stated in several places, to be an autonomous body, enjoying self-government, consequently a DEMOCRATIC ORGANIZATION. The truth of this we intend to show by an investigation of the different offices to which the care of the kin's business was committed.

A council, consisting of a number of old men, formed the highest authority of the calpulli. How many they were is not stated, but it is probable that their number varied according to that of the members of the kin. Medicine-men may, also, have been members of this body, which held its meetings at intervals in the official house of the "quarter." It exercised criminal jurisdiction as well as civil, and attended to all grave questions affecting the kinship. It is also stated that, on certain occasions, a general meeting of all the members of the calpulli was convened.¹⁵²

¹⁴⁹ No better illustration of the "Quauhcalli" can be found than that given by H. H. Bancroft ("Native Races," cap. XIV, p. 453. Volume II).

¹⁵⁰ The cruel and unwholesome nature of aboriginal places of detention previous to the conquest is amply stated. As it is very justly remarked by Mr. Bancroft (Vol. II, p. 453): "They had prisons, it is true, and very cruel ones, according to all accounts, but it appears that they were more for the purpose of confining prisoners previous to their trial, or between their condemnation and execution, than permanently, for punishment." To the authorities quoted by the celebrated Californian, I will add here in further support of his views (and mine), Gomara (Vedra I, p. 442): "Las cárceles eran bajas, húmedas y oscuras, para que temiesen de entrar allí." Velazquez (Vol. I, Part II, Trat. II, cap. I, p. 370). Tezozomoc ("Crónica" cap. XCIX, p. 176): "mandóles llevar á la cárcel á todos, que llamaban canucalco, que era á manera de una caja, como cuando entraplan ahora alguna persona, que les dan de comer por onzas."

¹⁵¹ "Ancient Society" (Part. II, chapter II, pp. 71, 72, and 73. Chap. VIII, p. 225, Cap. XI, pp. 285 and 297).

¹⁵² It is singular that this council of the kin or "gens," while some parts of its functions are preserved in nearly every author, has as a body been so generally overlooked. Zurita (pp. 55 and 56) says: "the chief does nothing without consulting the other old men of the calpulli." Indirect evidence of it is given by Sahagun (Lib. II, cap.

This council however, while it thus united both the highest administrative and judiciary powers, required other officers for

XXXVII, p. 185), in his description of the feast of the month "Ixcalli." These "old men" reappear again in connection with celebrations affecting the calpulli, at least occasionally. This council however, still existed at a recent date (1871) among the natives of Guatemala. Sr. D. Juan Gavarrete of the City of Guatemala (La Nueva) writes to me under date of 14th March, 1879: "Cuando en el pueblo hay varias parcialidades ó calpules, . . . cada una de ellas tiene su calpul ó consejo de cierto número de Ancianos y estos reunidos eligen las Autoridades comunes del pueblo, nombrando tambien alcaldes subalternos para las diversas parcialidades." In his Introduction to the "*Real Ejecutoria*" (Col. de Doc. II, pp. XII and XIII), the late Sr. José F. Ramírez attributes the creation of an elective municipal council to an act of policy of the Spanish government. It is clear, however, from the authors of the XVIth century, especially from Zurita, that this "democratic element" ("el elemento democrático" as Sr. Ramírez calls it), was an *aboriginal* one. Therefore the council still subsisting in Guatemala is an original feature, with changes in names and functions, made to suit the laws of Spain. Ramírez de Fuenleal (Letter of 3d Nov., 1532. 1st Recueil, p. 249), mentions "other officers called *viejos* (old men)" in "each quarter or as they were now called, parishes." The following quotation from Juan de Solórzano ("*De Indiarum Jure*," Vol. II, lib. I, cap. XXIII, pp. 210, §21), is of interest upon the question raised by Sr. Ramírez: "In Nova quoque Hispania, cum hae reductiones, quas ibi *Aggregationes* vocant, i praestanti illo, et prudenti Duce Ferdinando Cortesio stabilitas, et constituite fuissent, et postea, temporam, et Hispanorum Injuriar, valde collapsae, ac subversae; alias deuo fieri et factas instaurari curavit Excellentissimus Ille, et Pijissimus Prorex Canes de Monte Regio, schedulis etiam, et provisionibus Regijs alie ad hoc demandatis, morem gerere cupiens: in quibus tamen exequendis, magnae difficultates, et Indorum strages expertae sunt, quia eorum aliqui voluntario suspendio vitam finire maluerunt, quam in designata sibi municipia reduci." This was published in 1639."

In all likelihood there was no regular time of meeting of these "old men." They met as emergency required, and as they were called together. There is even a trace of a general meeting of the inhabitants of a calpulli, in Zurita (p. 62): "Dans ces circonstances, les habitants du calpulli se réunissent pour traiter les intérêts communs, et régler la répartition des impôts, etc." We thus witness in the calpulli the following methods of exercising authority: through the joint meeting of all its members for the discussion of matters affecting the whole community, through the "old men" controlling the regular business, and, through what the older authorities called "chiefs" or executive officers, of whom I shall treat hereafter. An important question remains to be examined here namely: whether the calpulli really had, as I have asserted, criminal jurisdiction over its members, or whether this pertained to higher officers or so-called "tribunals."

Against the assumption, that questions of life and death could be decided by the "quarters," "barrios," or "calpulli," there is we confess it, apparently weighty evidence. In order to examine this vital question critically, I am compelled to take each author by himself, comparing his various statements (if there are more than one) on the same subject with each other. I must premise, however, that neither Cortés, nor Andrés de Tapia, nor Bernal Díez de Castiello mentions having seen any one judged and condemned by the head-war-chief of the Mexican tribe. This, however, may be a simple omission on their part.

Sahagún (lib. VIII, cap. XXV, p. 314): "y los casos muy dificultosos y graves, llevábanlos al señor para que los sentenciase. Juntamente con trece principales muy calificados, que con el andaban, y residían. Estos tales eran los mayores jueces, que ellos llamaban tecutlatoque: estos examinaban con gran diligencia las causas que iban á sus manos; y cuando quiera que esta audiencia que era la mayor, sentenciaba alguno á muerte, luego lo entregaban á los ejecutores de la justicia." Thus far the jurisdiction of the tribal officers only comes into play. But the same author also mentions the

everyday business, who should at the same time be the executors of its decrees. Of these officers there were two, both strictly

power of certain officers of the kin to kill in punishment of certain crimes, (Lib. III, Appendix, cap. VI. p. 271). If a young man was caught drunk: "castigábanle dándole de palos hasta matarle, ò le daban garrote delante de todos réunidos." This being done in the case of a youth committed to the "telpuchcalli," it necessarily follows that the power to punish by death, was vested in the kin to which the particular "telpuchcalli" belonged.

Zurita (p. 101 and 106) intimates rather than asserts, that all grave matters, including life and death had to be submitted to the highest "court of appeals," "les douze juges d'appel" over which the king presided. But he does not state that this body had exclusive jurisdiction.

Gomara (Vedia I, p. 442, "*Conquista*") evidently mistakes in confounding the gatherers of tributes with judicial officers and says nothing in regard to criminal jurisdiction. His statements will be examined elsewhere.

Mendieta (Lib. II, cap. XXVIII, pp. 134-136) says that all the "Judges" remained in the official house of each tribe: "cada uno de ellos en su propio palacio tenía sus audiencias de odores que determinaban las causas y negocios que se ofrecían, así civiles como criminales, repartidos por sus salas, y de unas había apelación para otras." Further on he says that every eighty days "se sentenciaban todos los casos criminales, y duraba esta consulta diez ó doce días." *Torquemada* (Lib. XI, cap. XXV, pp. 352 and 353) is remarkably indefinite on the point. To him, the tribal officers alone appear prominent in the case. (Cap. XXVI, pp. 354 and 355), however, wherein he fully treats of the judicial organization of *Texcoco*, enables us to discern the separate jurisdiction of each calpulli. The textual rendering of the whole chapter would be too lengthy, and I must therefore confine myself to abstracts. He begins by saying that, while *Texcoco* had fifteen "provinces" subject to it ("sujetas á su Señoría"), "not all of them had supreme Judges" ("pero no en todas había Jueces de estos inmediatos, y Supremos"). Therefore it was ordained, "that there should be six courts ("audiencias"), like chancery-offices ("como chancillerías") in six particular pueblos, to which all the other said Provinces were reduced, and to them they applied from all over the kingdom." He further states that at each of these houses (which he subsequently calls "tecpans") were stored the "royal tributes": "se recogían todos los Tributos Reales, por los mismos Jueces." Besides, there were "four Judges" at the "palace," and at each of these six "courts," two "Judges" and one "executive officer" (alguazil).

From further details given, it follows that these six "pueblos" were so near to the official house of the tribe, as to make it more than likely that they were the six *Calpulli* of *Texcoco*, mentioned by *Ixtlilxochitl* (12th "*Relacion*") or "*Pintura de México*," Vol. IX of Kingsborough, p. 387) as having been established by "Fasting wolf" (Nezahualcoyotl), which story he repeats in the "*Histoire des Chichimèques*" (Cap. XXXVIII, pp. 263 and 264).

The description of *Texcoco* by *Torquemada* (Lib. III, cap. XXVII, p. 304): "pero no se ha de entender, que toda esta Casería estaba recogida, y Junta; porque aunque en su mayor parte lo estaba, otra mucha estaba repartida, como en Familias, y Barrios; y de tal manera corría esta Población, desde el corazón de ella (que era la Morada, y Palacios del Rei) que se iba dilatando, por tres ó quatro Leguas," shows that the calpulli of that ancient pueblo were scattered over a great expanse. At the close of the 17th century (1690, about) it is stated by *Vetancurt* ("*Crónica de la Provincia del Santo Evangelio de México*," pp. 159 and 160), that, besides the "city," there were "29 pueblos de visita, en cinco parcialidades repartidos." All this corroborates our assumption: that the six "pueblos" of *Torquemada* were in fact but the six "barrios" or kins, each of which exercised, for itself and through its officers, criminal jurisdiction over its members.

There is no need of proving the fact that the several tribes of the valley had identical customs, and that their Institutions had reached about the same degree of development. It is even asserted by some (*Prescott*, Book I, cap. II, p. 30) that "in *Texcoco*

elective and therefore liable to be deposed, one of whom represented more properly the administrative, the other the executive (consequently military) authority. The first one of these was the "calpullec" or "chinancallec;"¹⁵³ the second, the "elder brother"

the judicial arrangements were of a more refined character." If now, as I have shown, the council of the Kin exercised power over life and death among them, it certainly had the same power among the ancient Mexicans. Besides, the same thing is inferable from the nature of many of the crimes punished by death. Conspicuous among these are the cases wherein tenure of lands became affected. If a member of the kin changed the limits of a "tlalmilli," it was a crime over which the calpulli alone had jurisdiction, and the same occurred if any one member neglected to attend to the lots of children placed in his care. We have seen that in both instances the penalty was death.

It is of course understood, that this power did not go beyond the limits of the kin and of such outcasts as were attached to its members. Over members of other kins it had no jurisdiction. The adjustment of matters between kin and kin became exclusively the duty of the tribe.

One of the most characteristic remarks, however, on the general functions of the kin is that of *Zurita* ("Rapport," etc., p. 53): "Finally, what is called in New Spain Calpulli, answers to what among the Israelites was called a tribe."

¹⁵³ *Zurita* ("Rapport," p. 50): "The chiefs of the third classes are still called Calpullec in the singular, and in the plural Chinancallec, that is to say: chiefs of very ancient race or family, from the word Calpulli or Chinancalli, which is the same, and signifies a quarter (*barrio*) inhabited by a family, known as of very ancient origin, which for a long time owns a territory with well defined boundaries and all the members of the same lineage." This statement is copied by *Herrera* (Dec. III, lib. IV, cap. XV, p. 135), with the exception that he omits the names, substituting that of "pariente mayor." In regard to this it is added by *Zurita* (pp. 60 and 61): "The calpullis have always a chief necessarily in the tribe. He must be one of the principal inhabitants, an able subject who can assist and defend them. The election is made among them. They are much attached to him, as the inhabitants of Biscay and of the mountains are to him who is called *pariente mayor*. The office of these chiefs is not hereditary: whenever one dies they elect in his place the most respected, the ablest and wisest old man. If the deceased has left a son who is qualified, he is chosen, and a relative of the former chief is always preferred." *Herrera* (Id. p. 135).

Although the above two authors speak but indefinitely of the "chief" of the calpulli, it is likely that they mean two chiefs, one of which is the calpullec, and the other the teachcauhlin. This is indicated by the name of "pariente mayor." *Zurita* does not say, according to Mr. Ternaux's translation, that this chief was thus called, but *Herrera*, who copies him, writes very distinctly: "que llamaban parientes maiores." Now, according to *Molina* (II, p. 91), "teachcauhlin" signifies elder brother. *Torquemada* (Lib. XIV, cap. VI, p. 544) gives to each "*barrio ó parcialidad*" two officers, namely, a calpixqui or gatherer of tribute or stores, and a "regidor, un Tecuhtli, que se ocupaba en executar lo que mustros Regidores executan, y hacen." But it is plainly evident, from the details given by the celebrated Franciscan, that he has lost sight of the peculiar position of officers of a kin, and looks to tribal functions and offices. Else, how could he assert of his "Regidor" that he was always in the "palace:" "y todos los Dias se hallaban en el Palacio, á ver lo que se les ordenaba, y mandaba; y ellos, en una grande Sala, que llaman Calpulli, se juntaban, y trataban de los negocios tocantes á su cargo."

"De l'ordre de succession observé par les Indiens" ("1st Recueil" of Ternaux, p. 225): "quant au mode adopté pour régler la juridiction et l'élection des alcaldes et des régidores des villages; ils nommaient des personnes notables qui portaient le titre de *achcacauhtin* qui est un nom de charge, comme l'est aujourd'hui celui d'alguazil. Les tribunaux de ces officiers étaient établis dans la capitale." . . . "Il n'y avait pas d'autres élections d'officiers." And further on the same document says (p. 227): "Ces achcacau-

"teachcauhtin" or "achcacahtin."¹⁵⁴ Both were, in turn, ex-officio members of the council itself.¹⁵⁵ The "calpullec" or "chinancallec" was, in fact, what is still known among Indian communities of Mexico, Central America and New Mexico, as the "governor;" or rather his office was, for the *kin*, what the office of "gobernador" now is for the whole *tribe*.¹⁵⁶ Upon his

litis, c'est ainsi qu'on les nommait, remplissaient les fonctions d'alcalde. Pour le moindre petit vol, c'est à dire pour avoir dérobé seulement du maïs, ils condamnaient à la potence." The singular feature is here asserted to exist, that the same officer should have been Judge ("alcalde") and executioner of his own decrees ("alguazil"). We meet also with the flagrant contradiction of "alguazils," elected for the villages, but whose courts resided "at the capital." Everywhere the same lack of distinctness is witnessed; the confusion between aboriginal institutions and Spanish organization is apparent.

Sebastián Ramírez de Fuenleal ("Lettre," 3 Nov., 1533, p. 247) gives quite a clear picture of the "calpulli," adding: "Ces contribuables ont un chef et des commandants"; (p. 248): "Ils ont parmi eux des officiers que nous appelons principales (chefs); *il y en a deux dans chaque quartier qui portent aujourd'hui le nom de paroisses*."

Finally, I refer to what has been said in the preceding note (152) about Tezcuco and the two officers of each so-called "pueblo." The fact that there were two of them is thus fully established, likewise that of their election; and as for their titles, they are found in the quotations just referred to and copied.

It is further confirmed through a statement of *Vetancurt* ("Teatro Mexicano," Vol. I, p. 371): "en cada parcialidad, que llamaban calpulli y ahora tlaxilacalli; había uno como regidor que llamaban teuhitl; estos asistían á palacio todos los días á saber lo que el mayordomo les ordenaba; éstos entre sí elegían cada año dos en lugar de alcaldes, que llamaban tlayacanque y tequitlatoque, que ejecutaban lo que por los teuhitles se les mandaba; y para ejecutores tenían unos alguaciles que hoy llaman topile."

The term "tlayacanqui" is defined by *Sahagún* (Lib. II, cap. XXI, p. 143) as "cuadrillero." *Molina* (II, p. 120) has "tlayacantli," "el que es regido, guiado, y gobernado de otro, o el ciego que es adiestrado de alguno" ("Tlayacatl," "cosa primera, o delantera"). *Torquemada* (Lib. XIV, cap. VI, p. 545) calls the Tlayacanque "en lugar de merinos."

¹⁵⁴ *Molina* (I, p. 58).

¹⁵⁵ This results necessarily from the duties of the officers alone, as permanent representatives of the council of the *kin* or calpulli.

¹⁵⁶ The "Gobernador," as we shall hereafter see, was the successor to the "Cihuacohuatl," according to the Spaniard's notion of the nature of the latter's office. It is very interesting to notice that the "Cihuacohuatl" was, in the tribal government, the exact counterpart of the "Calpullec" in the *kin*. I am indebted to *Sr. Don Juan Gavarrete*, of the City of Guatemala (la Nueva), for the following description of the office of "Gobernador," as it is still found among the aboriginal settlements of Guatemala. This gentleman, (whose name is associated with that of my friend Dr. Valentini, in a noble effort to preserve the historical treasures of his country), writes to me under date of 14th of March, 1879: "Los pueblos formados por la antiguos misioneros ó por los conquistadores, y que son los que subsisten hasta el día de hoy, han sido siempre gobernados por un *Gobernador* vitalicio elegido entre las familias nobles de la tribu (*cacique*), y un consejo á la usanza española compuesto de dos Alcaldes, cierto número de consejeros llamados Regidores entre quienes se distribuyen las comisiones de servicio público y un secretario.

"La dignidad ó cargo de Gobernador, para la cual elegían en nombre del Rey los antiguos Capitanes Generales y despues los Presidentes de la República, es muy apetecida por los indios nobles y mientras el que la egerce no dá motivo por su mala conducta para ser removido puede contar con la perpetuidad y aun con dejarla á sus hijos

death "they elected, to fill his place, the most respected old man, the most able and most popular." It appears though that the choice often fell upon a son or near relative of the deceased, provided he evinced sufficient ability.¹⁵⁷

It was the duty of this officer to preserve a plat of the territory dwelt upon by the kin, showing the location of each "tlalmilli," of the official tracts, of those of the "houses of the youth" and of worship; if the latter two were not, as we suspect, perhaps identical. These simple records he had to renew from time to time, according as mutations or additions occurred. The *stores* of the kin were under his supervision, though he could not dispose of them at his pleasure, but only for public purposes. Thus, aside from the presents, which always had to go with any public act of importance, it was his duty to provide, out of these stores, for everything requisite for the numerous religious and other festivities.¹⁵⁸ He had, under his immediate orders, the "stewards," "calpixqui," which attended to the details connected with the gathering, housing, and dispensing of all supplies.¹⁵⁹ It is prob-

si los tiene capaces de egercerla El cargo de Gobernador traia consigo los privilegios de usar *Don*, montar á caballo, usar baston y tener una numerosa servidumbre, no tenian jurisdiccion civil, pues esta competia á los Alcaldes, pero si la tenian en lo criminal en los delitos leves, siendo su poder principal sobre lo económico y gubernativo."

¹⁵⁷ Zurita ("Rapport," etc., pp. 60 and 61).

¹⁵⁸ Zurita ("Rapport," etc., pp. 51 to 66). Copied in a condensed form by Herrera (Dec. III, Lib. IV, cap. XV, p. 134).

¹⁵⁹ The term "calpixqui," gatherer of crops, is so indiscriminately applied that it becomes necessary to investigate what class of officers were really meant by it. In general the "calpixca" were sent to subjected tribes, as representatives of their conquerors. For each such officer abroad there was one in the pueblo of Mexico, to receive and to house the tribute which the former collected and sent. The calpulli or kins, however, needed no officer of the same kind properly, because they owed no tribute to the tribe. The assertion of *Torquemada* (Lib. XIV, cap. VI, p. 545): "que el Maiordomo mayor del Rei, se llamaba Hueycalpixqui, á diferencia de otros muchos, que havia, que se llamaban Menores; porque tenia cada parcialidad el suyo," applies in this case to the tax-collectors and stewards themselves, and not to the stewards of the kins. The confused notions about the true nature of the office is also shown in the name of the official house. It is called by *Torquemada* alternately "tecpan," "calpul," finally also "calpixca, que era la casa del comun del Pueblo," (Lib. XIV, cap. I, p. 634). In confirmation of what has already been said in "*Tenure of Lands*" (pp. 413-428), I here refer to *Zurita* (pp. 238-242), "*De l'Ordre de succession*" (p. 229), *Motolinia et d'Olarie* ("*Lettre*," 27 Aug., 1554, pp. 403-406). We must never forget that tribute or tax was only due from a *conquered tribe* to its *conquerors*. No reference is made anywhere to tribute or tax gathered *inside* the pueblo of Mexico, but Tlatilulco, however, was obliged to pay a certain contribution (*Durán*, Cap. XXXIV, p. 270).

Nevertheless, the term "calpixqui" is found applied very distinctly to an office of the kin. *Durán* (Cap. XXI, p. 186) calls them "mandoncillos de los barrios." With equal propriety the calpixca are termed "governors" and "captains." It only proves that, while each kin had its stewards, they were under the direction of a "mandon,"

able that he himself, appointed the stewards subject to approval by the council.¹⁶⁰ Aside from these subalterns, the "calpullec" had his runners and attendants, mostly members of the household, perhaps "bonded" people. His judicial power was limited to minor cases, and it is more than doubtful if he held, alone, any authority to decide upon matters of life and death. But it is stated on high authority, that it was the duty of this officer, "to defend the members of a calpulli, and to speak for them."¹⁶¹ We may be permitted to inquire, whether this, perhaps indicated, that the "calpullec" was also the "tlatouni" or speaker, who represented the kin in the tribe's supreme council. This must, however, be answered in the negative, for the obvious reason that he could not be in two places at the same time. The kin's official building was assigned to him as a residence, that he might be there on duty *always*, consequently he could not spend his time outside of it at the official house of the tribe.¹⁶² Alongside of this officer (who corresponds almost to the "Sachem" of north-eastern tribes), we find the "elder brother"—"teachcauhtin," "achcacauhtin," or through corruption, "tiacauh." He was, as already stated, the kin's military commander or war-captain, and the youth's instructor in warlike exercises; but besides he was also the executor of justice—not the police magistrate, but the chief of police (to use a modern term of comparison) or rather "sheriff" of the calpulli.¹⁶³ As military commander he could

or superior officer. This could only be the "calpullec," since it is positively stated by *Zurita* (p. 62): "car lors des assemblées annuelles, qui sont très nombreuses, il distribue gratuitement des vivres et des boissons." This had to be done out of the stores of the kin.

The term "tequitlato" is probably equivalent to "calpullec." It is derived from "ni-tequitli," to work or pay tribute (*Molina*, II, p. 106), and "ni-tlaton" to speak (*Id.*, II, p. 140); therefore "tributary speaker," or "speaker of tribute." But this is only used in the case of subjected tribes, where the "calpullec" was the one who cared for the tribute due by his kin, even collecting it. See *Fray Domingo de la Anunciación* ("Lettre," Chalco 20 Sept., 1554, in *2d Recueil*, p. 340), "les tequitlatos ou percepteurs." *Sahagun* (Lib. VIII, cap. XXXVIII, pp. 329-332) devotes a whole chapter to "De los grados por donde subian hasta hacerse Tequitlatos," without saying, however, what the latter means. I suspect it to be intended for "Tecuhtlatouques."

¹⁶⁰ This may be inferred from the nature of the office.

¹⁶¹ *Zurita* ("Rapport," etc., p. 62): "Il a soin de défendre les membres du calpulli, de parier pour eux devant la justice et les gouverneurs."

¹⁶² "Tenure of Lands" (p. 410 and note 52). *Zurita* (p. 286).

¹⁶³ It has already been shown that "achcauhtli," "achcacauhtli," and "teachcauhtin" or "tiacauh" are synonyms. I refer to "Art of War" (p. 119 and note 91) in regard to the various and contradictory notions about the nature of the office. Still, the prevailing idea is that, besides being the "teachers" and the "captains," they also were the "executioners" of the kin. "De l'ordre de succession" (p. 325): "Ils nommaient des

appoint his subalterns in the field, and as executor of justice he had the same privilege while at the pueblo. The "teachcauh tin," therefore selected his own assistants and runners. Accompanied by them and carrying his staff of office, whose tuft of white feathers intimated that his coming might threaten death,¹⁶⁴ the "elder brother" circulated through his calpulli, preserving order and quietness in every public place thereof. If he found or heard of any one committing a nuisance or crime, he could seize him forthwith and have him carried to the official house, there to be disposed of as the custom and law of the kin required. But it is doubtful whether, except in extraordinary instances, he was authorized to do justice himself without the council's knowledge and consent.¹⁶⁵

Ere we pass over now from the functions of the kin to those of the ancient Mexican tribe, we must however dwell at some length on a peculiar institution, yet shared by the Mexicans in common with Indian tribes in general. We refer to the rank and dignity of CHIEF among them. Chieftaincy and office are far from being equivalent. The former is a purely personal, non-hereditary distinction, bestowed in reward of merit only, whereas the latter is a part of the governmental machinery.¹⁶⁶ Hence it follows that a chief might fill an office or not, and still remain a chief, whereas

personnes notables qui portaient le titre de achcacaulltin qui est un nom de charge, comme l'est aujourd'hui celui d'alguailes." *Sahagun* (Lib. VIII, cap. XVII, p. 305) calls the Achcacaulltin "(ó verdugos) que tenían cargo de matar á los que condenaba el señor." *Torquemada* (Lib. XI, cap. XXVI, p. 335), "llamábanse Achcacaulltin, que quisiere decir mayores." There is hardly any doubt as to their functions.

¹⁶⁴ White was the color of death. (Bleaching skulls and bones!) This is amply proven by their mode of declaring, or rather announcing, war. The custom of carrying "staffs of office" is well established.

¹⁶⁵ *Torquemada* (Lib. XI, cap. XXVI, p. 335). *Clavigero* (Lib. VII, cap. XVI, p. 482) calls those "who arrested" delinquents "topilli." But this word means simply "rod, or baton of justice, staff, etc." (*Molina*, II, p. 150), and not office. There is no evidence that these officers might kill, without previous decision of the council, except perhaps in the great market place. *Cortés* ("*Carta Segunda*," *Vedia* I, p. 32): "Hay en la dicha plaza otras personas que andan continuo entre la gente mirando lo que se vende y las medidas con que miden lo que venden, y se ha visto quebrar alguna que estaba falsa." *Ortado* (Lib. XXXIII, cap. X, p. 301) copies *Cortés*, adding, however, "é quiebran lo que está falso, é penan al que usaba dello." *Bernal Diaz de Castillo* (Cap. XCII, p. 80) simply remarks: "y otros como alguaziles ejecutores que miraban las mercadérias," (*Vedia*, Vol. II). I hardly need any reference in regard to the manner of acting and mode of appearance of the "elder brothers." Their functions of "police" are repeatedly described in the older sources.

¹⁶⁶ *L. H. Morgan* ("*Ancient Society*," p. 71): "Nearly all the American Indian tribes had two grades of chiefs, who may be distinguished as sachems and common chiefs. Of these two primary grades all other grades were varieties. . . . The office of sachem was hereditary in the gens, in the sense that it was filled as often as a vacancy occurred; while the office of chief was non-hereditary, because it was bestowed in reward of per-

it was not necessary to become a chief in order to fill certain offices. Still it is evident that, as chiefs were always men of peculiar ability, the higher charges were generally filled by chieftains.

The title and rank of "grandfather" ("Tecutli,")¹⁶⁷ which was the Mexican term for chieftain in general, was open to any one who strove to deserve it. It was conferred:

1. In recompense for warlike prowess, and actions of personal intrepidity and superior shrewdness. Courage alone could not secure it; therefore the "distinguished braves" were not always chiefs.¹⁶⁸

2. In reward for actions denoting particular wisdom and sagacity, and in acknowledgement of services in the councils, or as traders.¹⁶⁹

sonal merit, and died with the individual." I have selected the term "officer" as a substitute for Mr. Morgan's "sachem," because the latter is a northern Indian word, whereas the former, while it expresses the nature of the charge and dignity, is more widely known, and therefore better understood. It is out of the union of the attributes, of both officer and chief, that nobility and monarchy have been claimed to exist. Among the Mexicans, in fact among the most highly advanced Indian tribes (the Inca of Peru not excluded), the dignity of chief was still a personal matter, and not necessarily connected with office. The chiefs are the "knights," mentioned by *Garciasso de la Vega* ("Histoire des Incas," Lib. VI, cap. XXIV, XXV, XXVI) and *Herrera* (Dec. V, Lib. IV, cap. VII, p. 63; Lib. IV, cap. I, p. 63). With the Muyscas of Bogotá, compare *H. Ternaux-Compans* ("L'ancien Cundinamarca," § XXVII, pp. 57 and 58). *Oviedo y Valdés* (Lib. XXVI, cap. XXXI, p. 410). *Herrera* (Dec. VI, Lib. V, cap. VI, pp. 116 and 117). Compare also, in regard to the dignity of "military chief" among the wild tribes of the Rio Orinoco and of its tributaries, *P. José Gumilla* "Histoire naturelle, civile, et géographique de l'Orénoque," translated by Mr. Eidous, 1788, (Vol. II, chapter XXXV, pp. 280-292). Very important.

¹⁶⁷ *Molina* (II, p. 98), "ahuelo," "tecul." It evidently should be "abuelo," and is therefore only a misprint. The older reports have the word "tecle," and only the later writers (those after the year 1530) begin to write it "tecutili," "tecutili," "tencili." Whether the "teules" meant really "gods," or rather "tecutilin," as plural of "tecutil," is yet doubtful. It is almost a truism to recall here the Roman "senex," and the German "grave" or "Gra." Among American tribes we have, in Q'Quiché, "a'ra," old, "a'ha'u,"—chief; in Maya, "Hachyum,"—father, and "a'ha'u,"—chief—also "achi,"—brave.

¹⁶⁸ *Sahagun* (Lib. VIII, cap. XXXVIII, pp. 329-332): "De Los grados por donde subian hasta hacerse Tequilatos," especially (p. 331): "y á los que por sí prendian quatro cautivas, mandaba el rey que los cortasen los cabellos como á capitán, llamábanle tal diciendo . . . el capitán mexicatli, ó el capitán toltolancatli, á otros nombres que cuadraban á los capitanes. De allí adelante se podian sentar en los estrados que ellos usaban de petates ó icpales en la sala donde se sentaban los otros capitanes y valientes hombres, los cuales son primeros y principales en los asuntos, y tienen barbotas largas, orejeras de cuero, y borlas en las cabezas conque están compuestas;" *Zurita* ("Rapport," p. 47): "Les chefs qui, comme nous l'avons dit, se nommaient Tec Tecutzin, ou Teutley au pluriel, n'exerçaient le commandement qu'à vie, parce que les souverains suprêmes ne les élevaient à ces dignités qu'en récompense des exploits qu'ils avaient faits à la guerre, et des services rendus à l'état ou au prince". *Mendieta* (Lib. II, cap. XXXVIII, p. 166). *Torquemada* (Lib. XI, cap. XXIX, p. 361). *Clavigero* (Lib. VII, cap. XIII, pp. 471 and 472), and others.

¹⁶⁹ *Zurita* ("Rapport," p. 47). *Sahagun* (Lib. IX, cap. II, p. 343): "Estos mercaderes

In both the above instances (or kinds of instances) actions of particular merit facilitated, at least, the acquisition of the title; but it could, also, be obtained:—

8. By the observance of rigorous and even cruel rites of "medicine" for a stated time, which put the courage, fortitude, and self-control of the candidate to the severest tests.¹⁷⁰ Although a detailed account of these rites might perhaps be withheld for a subsequent sketch of ancient Mexican worship, yet they equally deserve a place here.

The candidate appears to have been presented at the great central place of worship by the representatives of his kin, perhaps, also, by the other chiefs of his tribe. There he underwent four days and four nights of the most cruel torments. While but little nourishment was allowed him (some went even so far as not to eat anything at all during this time), his blood was drawn freely, and no sleep was permitted to settle on his weary eyes. From time to time he was exposed to taunts, to injurious words, to blows and even to stripes. While he was thus hungry and thirsty, weakened from loss of blood through self-sacrifice, others ate and drank plentifully before his eyes. Finally, his clothes were torn from his body, and with nothing on but the breech-cloth or diaper, he was at last left alone at the "calmecac," there to do the rest of his penance. When these four initiatory days were past, the candidate went back to his calpulli, to spend the remainder of the time (about a full year), in retirement, and abstinence, frequently attended with more or less self-inflicted bodily suffering. When the kin had secured the necessary amount of articles to be offered up in worship, or given to the medicine-men, officers, chiefs, and guests attending the installation, this final solemnity was allowed to take place, provided always that the courage and personal strength of the novice had not forsaken him. Another period of fasting, sacrifice, and torture, similar to the one at the opening of the career of preparation, closed the probation. Some of the ordeals were again of the most trying nature. Finally the store of gifts was distributed; eating and drinking alternated with

eran ya como caballeros, y tenian divisas particulares por sus hazañas." . . . *Frays Alonso de Montúfar* ("Supplique," etc., 30 Nov., 1554. "Treizième relation d'Ixtlilxochitl," Appendix, p. 257). "Des Cérémonies observées autrefois par les Indiens lorsqu'ils faisaient un Teclé," (1st "Recueil," p. 233). *Mendieta* (Lib. II, cap. XXXVIII, p. 156)

¹⁷⁰ Gomara ("Conquista," Veda I, p. 435). "Des Cérémonies observées," etc. (pp. 233 etc.). *Mendieta* (p. 156). *Torquemada* (Lib. XI, cap. XXIX and XXX, etc.).

solemn dances to the monotonous rhythmic noise called Indian music. The candidate was, at last, once more dressed in becoming apparel, and could recuperate, being himself now the "feasted one."¹⁷¹

Men, however young in years, who had successfully endured such great trials, certainly deserved to be looked upon thereafter as persons of uncommon fortitude. Hence indeed the chiefs or "tecuhltli" were particularly fitted for responsible offices of any kind. They were looked upon with deference, their voice was heard and listened to, and it is no wonder if higher charges, especially those of a military nature, were filled by such as had, in one way or another, achieved this distinction.¹⁷² But no privilege was connected with their dignity, except that of wearing certain peculiar ornaments, and none was transmitted through them to their descendants.¹⁷³ That the "tecuhltli," besides, did

¹⁷¹ For the above description of the formalities of creating a "Tecuhltli," I refer to the sources quoted in the preceding three notes. It is interesting to compare similar ceremonies used by the Indians of the Orinoco, *Gumilla* ("Histoire," etc., Vol. II, cap. XXXV). Of the Yncas, *Garcilasso de la Vega* (Lib. VI, cap. XXIV to XXVI). *Cristoval de Molina* ("An account of the Fables and Rites of the Yncas," translated by C. B. Markham, in Hackluyt Society's Volume of 1873). "Narratives of the Rites and Laws of the Yncas." *Herrera* (Dec. V, lib. III, cap. VII, p. 63, etc.). We are forcibly reminded of the words of the quaint old poet and soldier, *Alonso de Erceilla*.

"Los cargos de la Guerra, y preheminençia
No son por flacos medios proveidos,
Ni van por calidad, ni por herencia,
Ni por hacienda, i ser mejor nacidos;
Más la virtud del brazo, y la exçeliencia,
Esta huce á los hombres preferidos,
Esta ilustra, habilita, perficiona,
Y quillata el valor de la persona."

("La Araucana." Parte II, Canto I". Edition of 1733, p. 2).

¹⁷² *Mendieta* (Lib. II, cap. XXXIX, p. 161: "Los que tenían el dñado de Tecutli, tenían muchas preeminencias, y entre ellas era que en los concilios y ayuntamientos sus votos eran principales." *Gomara* ("Conquista" Vedia I, p. 436). *Torquemada* (Lib. XI, cap. XXX, p. 306). It should always be remembered, that the dignity of Tecuhltli appears most prominent in Tlaxcallan. This people however, was but a league, very similar to that of the northern Iroquois, only consisting of four, instead of six tribes. Among them, the peculiar nature of the dignity of chief became more evident than it was among the Mexicans or the Spaniards. But there is no difference between the "Tecuhltli" of Tlaxcallan, and the "Tecuhltli" of Mexico or Texcoco. That the head-chiefs of Mexico were always "Tecuhltli" themselves, previous to their election, needs hardly any proof. *Domingo Munoz Camargo* ("Histoire de la République de Tlaxcallan." Translation by Mr. Ternaux-Compans, in Vol. 98 and 99 of "Nouvelles Annales des Voyages," 1843. See Vol. 98, p. 176, etc.).

¹⁷³ About the privileges of the Tecuhltli, compare *Gomara* ("Conquista" Vedia I, p. 436), *Mendieta* (Lib. II, cap. XXXIX, p. 161), *Torquemada* (Lib. XI, cap. XXX, p. 306), *Zurita* (p. 48, etc.). It is evident however, that the latter confounds the rank of chief with the particular office which might have been entrusted to him, else the "cultivation of lands" could not be included in the list of advantages derived from the position. Compare "Tenure of Lands," *Bustamante* ("Texcoco," etc., p. 235). Sr. Bustamante frequently copies *Zurita*. *Herrera* (Dec. III, Lib. IV, cap. XV, p. 136). In regard to the non-heredity of the dignity, I refer to the above authorities, and more especially to *A. de Zurita* ("Rapport," p. 49: "Lorsqu'un de ces chefs mourait, le prince accordait

not form as it is often stated, an order of chivalry, is amply proven by the fact that the bond of kinship interposed a barrier between them and such an imaginary association and furthermore, because their number could not be very great. The formalities required were so numerous and dilatory, the material for distribution in the shape of gifts was so large, that a frequent repetition of the occurrence lay beyond the power of the kin.¹⁷⁴ After this necessary digression, we return once more to the Mexican calpulli.

Besides being as already established in "Tenure of Lands," the unit of territorial possession, we found the Mexican kin to be a *self-governing*, therefore *democratic* cluster. Every one of these clusters had, within itself, all the elements required for independent existence as an organized society. Except for assistance and protection against outsiders, it needed no associates. Hence it follows, that since we find twenty Mexican kins aggregated into a tribe, this tribe was a *voluntary* association, formed for mutual protection.

Three attributes of the tribe are next to self-evident:

1. A particular territory;
2. A common dialect;
3. Common tribal worship.¹⁷⁵

sa charge à celui qui s'en était rendu digne par ses services, car les fils du défunt n'en héritaient pas s'ils n'en étaient investis." The very fact of the election, and the manner in which it was performed is also evidence. See the various documents in *Ternaux-Compans, 2d Recueil*.

¹⁷⁴ That such a festival or ceremony necessitated the accumulation of much provision and many articles for presents and offerings, is proven by numerous authorities. Gomara ("Conquista" Volla I, p. 436): "En fin, en semejantes fiestas no habia pariente pobre. Daban á los señores tecutiles y principales convidados plumajes, mantas, tocas, zapatos, bezotes, y orejeras de oro ó plata ó piedras de precia. Esto era mas ó menos, segun la riqueza y animo del nuevo tecutilli, y conforme á las personas que se daban. Tambien hacia grandes ofrendas al templo y á los sacerdotes." Zurita ("Rapport sur les différentes classes de chefs etc.," p. 28): "Ces solennités occasionnaient de grandes dépenses, car les assistants étaient fort nombreux; c'étaient les parents, les alliés et les domestiques du nouveau dignitaire. L'on faisait aussi des aumones considérables aux pauvres." "Des Cérémonies observées autrefois par les Indiens lorsqu'ils faisaient un Teclé." (1st Recueil, p. 233): "Celui que l'on nommait Teclé, devait d'abord posséder de grands biens, qu'il put donner aux prêtres et aux autres nobles." (P. 237): "Un grand nombre ne pouvait pas se procurer en si peu de temps la quantité suffisante, etc., etc." Mendota (Lib. II, cap. XXXVIII, p. 156): "Y así les costaba excesivo trabajo y gasto, como aqui se dirá." (Id., cap. XXXIX, pp. 160 and 161.) Veytia ("Historia Antigua," Lib. II, cap. IX, pp. 65 and 68): "Y era exorbitantísimo el gasto, por cuya causa algunos, cuyas facultades y caudal no era suficiente á reportarlos, dejaban de tomar este dictado." H. H. Bancroft (Vol. II, p. 199): "As before remarked, the vast expenses entailed upon a Tecutilli debarred from the honor many who were really worthy of it."

¹⁷⁵ For these three attributes of tribal organization I refer to Morgan ("Ancient Society," p. 13).

All three we find very plainly among the ancient Mexicans.¹⁷⁶ Since the tribe was formed of kins associating together voluntarily, it must be admitted that they stood on an equal footing, and had, all, an equal share in the tribal government. It was scarcely possible, however, from what we know of the population of aboriginal Mexico, that all the male members of the kins, at a general gathering, could form its directive power.¹⁷⁷ The latter consisted of delegates, elected by the kins to represent them; which body of delegates was the supreme authority, from whose decisions there should be no appeal.¹⁷⁸

¹⁷⁶ "Ancient Society," (Part II, cap. VII).

¹⁷⁷ There is no evidence of a general gathering of the tribe of Mexico, subsequent to the election of "Humming-Bird" (Huitzilihuitl) to the office of "chief of men." This occurrence which, according to the *Codex Mendoza* (Plate III), took place in 1386, is mentioned by Durán (Cap. VII, p. 53): "Y así haciendo su consulta y caudillo entre los grandes y mucha de la gente comun." *Tezozomoc* ("Crónica Mexicana" edited by Sr. Jose M. Vigil and annotated by Sr. Orozco y Berra, Mexico, 1878, cap. IV, p. 233), distinctly mentions delegates: "Casi con esto los mas principales, viejos, y sacerdotes de los Mexicanos, de los cuatro barrios." The "Codice Ramírez" ("Relacion del Origen de los Indios que Habitan esta Nueva-España segun sus Historias." "Biblioteca Mexicana," p. 39), uses the same words as Durán. *Sahagun* (Lib. VIII, cap. XXX, p. 318), gives probably the best and clearest picture of the most important meetings of the tribe,—those for election of the chiefs, and distinctly mentions only old men, officers and medicine-men.

¹⁷⁸ Evidence in regard to the existence and to the supreme authority of this body is found in many authors. In the first place we have the direct admission, that they elected the "chief of men" or so-called "King," and that the "matters of government" lay in their hands, in that (yet) anonymous Relation taken from the Archives of Simancas, translated and printed by Mr. H. Ternaux-Compans under the title: "*De l'ordre de Succession observé par les Indiens*" (1er Recueil, p. 228): "Des conseillers étaient chargés des affaires d'état; c'étaient pour la plupart des gens de distinction et des tecucils ou chevaliers comme nous les appelons. On choisissait toujours des personnes âgées, pour lesquelles le souverain avait beaucoup de vénération et de respect, et qu'il honorait comme ses pères." The supremacy of the council is positively affirmed, besides, in the following authorities:—

(1). In a fragmentary MSS. of the sixteenth century, found along with the "*Codice Ramírez*," and incorporated with the latter in the "*Biblioteca Mexicana*" ("*Crónica*," *Fragmento 2*, Cap. . . p. 147): "Considerando el nuevo Rey de México la fuerza que el español traía, juntó á consejo y hizóles representacion de aquesto, y lo que estaba prometido que de Ixtlilxuchitl había de salir la ruina de los Mexicanos, que se diesen con buenas condiciones, pues era menos mal que no morir á sus manos y á las de los españoles. No quisieron por tener concepto destos que eran insufribles y cudiciosos. Tornóles otra vez á tratar aquesto, y aún otras dos, diciéndoles ser entonces tiempo cómodo: dijéron que querian mas morir, que hazerse esclavos de gente tan mala como los españoles; y así quedó combenido que era mejor morir; la qual determinacion sabida por Cortés andaba dando orden á Ixtlilxuchitl de como sitiar la ciudad." This shows how decisive the voice and vote of the council was, over and above the wishes and counsels of the so-called "King" (at that time Quauhtemotzin), even at the time of the greatest danger, immediately before the last siege. Compare "*Art of War*" (p. 160) on the same subject.

(2). In same collection—*Fragmento 1* (pp. 124 and 125), acknowledging the final decisions of the council at the time of the older "wrathful chief": "y así en este tiempo

It is therefore a TRIBAL COUNCIL, called in the Mexican language "place of speech" ("Tlatocan"), which constituted the highest power among the ancient Mexicans.¹⁷⁹ In all probability it consisted of as many members as there were kins in the tribe,¹⁸⁰

comenzó á edificar el templo á su dios Huitsilopochtli á imitación de Salomón, por consejo de Tlaccacelil y de todos sus grandes." Idem (p. 117): "y luego llamó á Tlaccacelil y á sus consejeros, y diciéndoles lo que pasaba, de común acuerdo se determinó que se hiziese guerra á los de Tepeaca."

(3). The proper words of the last "wrathful chief" (Montezuma II), as reported by *Texozomoc* ("Crónica Mexicana," Vol. IX of Kingsborough, Cap. XCVII, p. 178) are: "hijos y hermanos, seáis muy bien venidos, descansad, que aunque es verdad yo soy rey y señor, yo solo no puede valeros, sino con todos los principales Mexicanos del sacro senado Mexicano descansad." This reply was given by the reputed "despot" to the delegates from Huexotzinco, who came to negotiate for peace and alliance against the Tlaxcallans. In connection with this we meet with the remarkable passage already quoted, which, while proving the fact that the Mexican tribe could not, alone, even treat, for itself, with a hostile tribe, establishes incidentally, also, the supremacy of the Mexican council over its head-chief: "Habiendo venido ante Moctezuma todo el senado Mexicano, y consultado sobre ello, dijo Zihuacoatl resolutivo: Señor, como será esto, si no lo saben vuestros conasejeros de guerra los reyes de Acuilhuacan Nezahualpilli, y el de Tecpanecas Tlaltecatzin? hagase entero cabildo y acuerdo: fue acordado así."

(4). *Diego Durán* (Cap. XI, p. 108): "A estos quatro señores y ditados, despues de eletes principes los hacian del consejo real como presidentes y oydores del consejo supremo, sin parecer de los quales ninguna cosa se auia de hacer." (Cap. XII, p. 108): "El rey tomó parecer con los grandes de lo que auia de hacer. Tlaccacelil, príncipe de los éxercitos, y los quatro del supremo consejo." (Cap. XIV, pp. 117 and 118) describes a called meeting of "los mas principales de toda la ciudad de México" with the two chiefs. (Cap. XVI, p. 132): "Tlaccacelil respondió, que le parecia cosa muy acertada y justa, y todos los del consejo determinaron de que se hiziese." (P. 133): "Montezuma aprobó el consejo y dixo: perdonad me, señores, que yo aunque soy rey no acertaré en todo: para eso tengo vuestro favor, para que me auiseis de lo que á la autoridad desta ciudad y nuestra conuinieren." I further refer to Cap. XVIII (p. 156), and other places.

(5). *Acosta* (Lib. VII, cap. II, p. 477): "De donde se puede entender, que entre estos el Rey no tenia absoluto mudo é imperio, y que mas gouernaua a modo de Consul, o Dux, que de Rey, aunque despues con el poder crecio tambien el mando de los Reyes, hasta ser puro tyrannico, como se vera en los ultimos Reyes." This latter assertion has already been refuted in a previous note. (Lib. VI, cap. XXV, p. 441): "Todos estos quatro eran del supremo Consejo, sin cuyo parecer el Rey no hazia, ni podia hazer cosa de importancia."

(6). *Herrera* (Dec. III, lib. II, cap. XIX, p. 76): "Estos quatro Ditados, eran del Consejo supremo, sin cuyo parcer no podia hacer el Rei cosa de importancia."

(7). Indirect evidence of the supreme power of the council is found in the descriptions of the mode of consultation about war or peace, as given by *Mendieta* (Lib. II, cap. XXVI, p. 129), *Torquemada* (Lib. XIV, cap. II, p. 537). The latter even mentions old women along with the men, as participating in the debate on peace or war, and describes this debate as truly "Indian."

¹⁷⁹ *Molina* (II, p. 140): "tlatocan," "corte ó palacio de grandes señores." (Id., I, p. 29): "consejo real," "tlatocanecentlalliztli." *Torquemada* (Lib. XIV, cap. VI, p. 545): "si no era en la corte, á la qual llaman Tlatocan, que es lugar de Juzgado, ó Audiencia."

¹⁸⁰ We have already noticed that there were twenty "barrios" (kins) in the tribe. Now we are told by *Bernal Díaz de Castillo* ("Hist. verdadera," etc., Vedia II, cap. XCV, p. 26): "y siempre á la continúa estaban en su compañía veinte grandes señores y consejeros y capitanes, y se hizo á estar preso sin mostrar pasion en ello." (Cap. XCVII, p. 99): "Ya he dicho otra vez en el capitulo que de ello habla, de la manera que entraban á

each calpulli sending a "speaker" ("Tlatoani") to represent it. Such positions could only be filled by men of acknowledged ability and reputation, who had acquired the distinction of *chiefs*, and hence their other title—"speaking chiefs" ("Tecuthatoca,") which was everywhere recognized, in aboriginal Mexico, as the highest office and charge.¹⁸¹

negociar y el acato que le tenían, y como siempre estaban en su compañía en aquel tiempo para despachar negocios veinte hombres ancianos, que eran jueces; y porque está ya referido, no lo tornó á referir." Furthermore, it is positively asserted by *Torquemada* (Lib. XIV, cap. VI, p. 544): "En lugar de Regidores, ponían en cada Barrio, ó Parcialidad, un Tecutli, que se ocupaba en executar lo que nuestros Regidores executan, y hacen, y todos los Días se hallaban en el Palacio, á ver lo que se les ordenaba, y mandaba." Consequently each calpulli or kin held one representative constantly at the official house of the tribe, and as there were twenty kins, we necessarily have here the twenty chiefs or "Judges," mentioned by Bernal Díez. The above statement of *Torquemada* is repeated (or copied?) by *Vetancurt* ("Teatro," Vol. I, p. 371).

Durán (Cap. XXVI, p. 215) mentions: "los grandes señores, que eran hasta doce." *Ixtlilxochitl* ("*Histoire des Chichimèques*," Cap. XXXIV, p. 236) says "there were fourteen great lords in the kingdom of Mexico." *Tezozomoc* (Cap. XXXVI, p. 57, Kingsb., Vol. IX) enumerates first twelve, then three more. This is the more singular after the detailed list giving *twenty* chiefs, which list I have already referred to in a previous note.

That the members of the tribal council were elected each one by his calpulli or kin follows from the statements of *Zurita* ("*Rapport*," etc., p. 60): "Les calpullis ont toujours un chef pris nécessairement dans la tribu. . . . L'élection se fait entre eux. . . . La charge de ces chefs n'est pas héréditaire. . ." (P. 61): "Ce chef est chargé du soin des terres du calpulli et d'en défendre la possession. . . ." (P. 62): "Il a soin de défendre les membres du calpulli, de parler pour eux devant la justice et les gouverneurs." Consequently this officer represented the kin towards the other kins of the same tribe, and this could only be done in the tribal council, as one of its members. How this election took place, the same authority tells us (p. 61), also that the office was for life, and that as capacity was the first condition, incapacity or unfaithfulness necessarily brought about removal.

¹⁸¹ *Molina* (II, p. 14): "Tlatoani," "hablador, ó gran señor." The plural is "Tlatoca." *Pimentel* ("*Cuadro*," p. 174). There is ample evidence of the high offices which bore this title. Compare *Torquemada* (Lib. IV, cap. XVI, p. 696): "los Tlatoques (que son los Señores, y Poderosos)." . . . *Tezozomoc* uses the term "Zemanahnac-tlatoani." *Zurita* (p. 48): "Los souverains se nommaient et se nomment encore Tlatoques, mot qui vient du verbe tlatoa, qui veut dire parler." *Bernal Díez de Castillo* (Cap. XXXVIII, p. 83, Vedia, II). "*Real Ejecutoria*" (Col. de Doc., Vol. II, p. 12 and note 36). In this document the word is used in the plural: "y diciendo que ya habían estado allí los Tlatoanis Teacames." It would be useless to quote further authorities. I shall only state that, according to *Sr. D. Juan Gararrete*, the term, as applied to "principales" or "old men," is still used among the Indians of Guatemala: "Los ancianos que á su edad agregan servicios publicos se llaman en algunos pueblos Tlatoques; pero esta denominacion casi ha desaparecido." (*Letter to the writer 14 March, 1879*.)

The term "tecutilatoca" decomposes into "tecutil" and "tlatoca." It is found in *Molina* (II, p. 83), as "in Tecutilatoca," "tener audiencia, ó entender en su oficio el presidente, oydor, alcalde, etc., etc." "Tecutilatoliztli." "Judicatura, ó el acto de exercitar su oficio el Juez." *Torquemada* (Lib. XI, cap. XXVI, p. 353): "y á los Jueces, Tecuthatoca, Señores, que gobiernan el bien publico, y lo hablan." I have already noticed that the "Tequitlato" mentioned by *Sahagun* (Lib. VIII, cap. XXXVIII, p. 329) might be a misprint or misspelling for "tecutilatoca." The same author says (Id., Cap. XXV, p. 314): "Estos tales eran los mayores jueces, que ellos llamaban *tecutilatocue*." *Molina* (I, p. 108): "senador," "tecutilatoca."

The place where this council assembled, was necessarily the official house of the tribe or "tecpan,"¹⁸² and there they met at stated intervals, possibly twice every Mexican month of twenty days.¹⁸³ Such meetings were fully attended, and they could be called, besides, at any time.¹⁸⁴ There is evidence that, during

Bustamante ("Tezcoco," p. 191): "Habla tambien abogados y procuradores; á los primeros llamaban Tepantlatonni (el que habla por otro)."

¹⁸² *Molina* (II, p. 93): "casa ó palacio real, ó de algun señor de salua." But of special importance is the following definition (I, p. 91): "Palacio real" — "tecpan, tlatocan, totocuanan." This shows that the tecpan was really the place where the council met." *Sahagun* (Lib. VIII, cap. XIV, pp. 302 and 303. Cap. XXV, p. 314). *Mendieta* (Lib. II, cap. XXVIII, p. 131). *Ixtlilxochitl* ("Histoire des Chichimèques," Cap. XXXVI, pp. 247-252). *Veytia* (III, cap. VII, p. 190). *Torquemada* ("Monarquía," Lib. XIV, cap. VI, p. 544), identifying "la Corte" with the "lugar de Juzgado, ó Audiencia." Further quotations are needless.

¹⁸³ This fact is implied by *Ixtlilxochitl* ("Hist. des Chichimèques," cap. XXXVIII, pp. 267, 268 and 269), when he affirms that, in notifying a hostile tribe of the intention to make war upon it, the notification was repeated thrice, at intervals of twenty days. *Veytia* ("Historia antigua de México," Lib. III, cap. VII, p. 209), says that every twelve days "cada doce días," the courts met to report to the "emperor." This is rather strange since (Id., p. 203, etc.), he says that these courts sat daily in what he calls the "palace." *Torquemada* (Lib. XI, cap. XXVI, p. 355): "De diez á diez Dias, y á mas tardar, de doce á doce, hacia junta el Rei de todos los jueces, así de las Audiencias del Reino, como de los de sus Consejos." In this case he speaks of Tezcoco. *Mendieta* (Lib. II, cap. XXVIII, p. 135): "Y así, á lo mas largo, los pleitos árdulos, se concluian á la consulta de los ochenta dias, que llamaban nappaotlatolli, demas que cada diez ó doce dias el señor con todos los jueces tenían acuerdo sobre los casos árdulos y de mas calidad." *Zurita* ("Rapport, etc.," p. 101): "Tous les douze jours il y avait une assemblée générale des Juges présidée par le prince. On y jugeait les affaires difficiles, celles de crimes qualifiés, et l'on examinait minutieusement tous les détails." *Clavigero* (Lib. VII, cap. XVI, p. 482), is very positive: "Each Mexican month, or within twenty days, a meeting of all the Judges was held in presence of the King, to decide upon all cases not yet disposed of." He evidently bases the statement upon *Gomara* ("Conquistador," etc., Vedia I, p. 442). "Consultan con los señores cada mes una vez todos los negocios," according to *Sr. Orozco y Berra* ("Ojeada sobre Cronología Mexicana," Introduction to the "Crónica Mexicana," published under the supervision of Señor José M. Vigil, pp. 174 and 175). *Gomara* rests principally upon an unpublished series of documents, entitled "Libro de Oro," now in possession of my friend, Sr. Icazbalceta, which collection was formed by the Franciscans under the auspices of the unjustly abused Fray Juan de Zumárraga, between 1531 and 1547. The statement of Clavigero is, therefore, not to be rejected. The "Codice Ramírez" (p. 65) says: "los quales daban noticia al Rey cada cierto tiempo de todo lo que en su Reyno passaba y se habia hecho." It is, therefore, to say the least, likely, that the full council met once a month, but, as we have stated in order to be just towards all, it is equally possible that it may have met twice. The reference to "Judges" needs no explanation. It is self-evident that for judiciary matters, alone, such meetings of executive officers were superfluous. Matters of government came up also,—and this is decisive of the kind of officers that were members of the tribal council, since they alone could fill such positions. These meetings were, therefore, full meetings of the council, and nothing else.

¹⁸⁴ This is abundantly proven by what has at last been recognized by *Sr. Orozco y Berra* as well as by my friend, *Sr. Chavero* ("Ojeada," etc.) as specifically Mexican sources of aboriginal history. See for inst.: "Codice Ramírez" (pp. 52, 62, 66, 67, 80). "Fragmento No. 1" (pp. 124, 127, 133, etc.). "Fragmento No. 2" (pp. 137, 147, etc.).

the critical period of Cortés' first stay at Tenuchtitlan, the twenty "speakers" held daily meetings at the official house.¹⁸⁵

In a society based upon kin we cannot expect a clear division of the powers of government, particularly as there were no written laws,¹⁸⁶ and custom alone ruled. The functions of the ancient Mexican council were not properly legislative, but they were rather *directive* and *judicial* combined. One of its first duties was, however, to maintain harmony among the kins.

The twenty independent social units composing the Mexican tribe, while bound together by the necessity of mutual aid to secure territorial independence, could not be expected always to live in peace with one another. Difficulties would necessarily arise between kin and kin, and to prevent such disputes from leading to actual warfare,¹⁸⁷ the council as a body of *official arbitrators* was needed.

According to the rules of kinship, the calpulli was not only bound to avenge any wrongs suffered by one of its members, but it was also responsible for the offences committed by the kinfolk towards any outsider.¹⁸⁸ Hence theft committed outside of the

Durán (cap. X, p. 83, XI, pp. 107, 108, 109, XIV, pp. 117, 123, XVI, p. 132, XVIII, p. 156), etc., etc. We forbear further quotations, since they would be too numerous. All go to prove that the council was frequently called together between the times of regular meeting. Quotations from *Tezozomoc* ("Crónica Mexicana") are useless, since they are very numerous and agree with those of *Durán* in the main. The fact of irregular meetings of the council having been called during the conquest, is further proven by *Sahagún* (Lib. XII, cap. III, p. 7), and *Torquemada* (Lib. IV, cap. XIV, p. 383).

¹⁸⁵ *Bernal Díaz de Castillo* ("Historia verdadera," Vedia, Vol. II, cap. XCV, p. 95): "y siempre á la continua estaban en su compañía veinte grande señores y consejeros y capitanes." (Cap. XCVII, p. 99): "Ya he dicho otra vez en el capítulo que de ello habla, de la manera que entraban á negociar y el acato que el tenían, y como siempre estaban en su compañía en aquel tiempo para despachar negocios veinte hombres ancianos, que eran jueces."

¹⁸⁶ A number of paintings are mentioned as representing the customs and manners of the natives. Specimens of these are found in *Codex Mendoza*, Lam., 58 to 72 inclusive. But none of these contained, or could contain or express, anything like a law. Compare, on Mexican paintings in general and their value, "On the Sources for aboriginal history of Spanish America," in Vol. 27 of "Proceedings of the American Association for the Advancement of Science." Señor Orozco y Berra ("Códice Mendocino,— Ensayo de desciframiento jeroglífico," beginning in No. 3, of Vol. I, "Anales del Museo Nacional de México") has commenced a publication which can be expected to shed much light on such picture-leaves, and the true position which they held among the ancient Mexicans.

¹⁸⁷ Conflicts between the inhabitants of different "barrios" during festive turnouts and religious gatherings could not always be prevented.

¹⁸⁸ *Morgan* ("Ancient Society," pp. 76 and 77). *Davila Padilla* ("Historia de la Fundacion y Discurso de la Provincia de Santiago de México," Lib. I, cap. XXVI, p. 83). The custom is general among other tribes and Mr. Morgan has adverted to it among the Maya of Yucatan and the Peruvians. It would be unnecessary display to produce further evidence: the remarkably clear statements of Mr. Morgan fully "cover the case."

calpulli, and especially the slaying, wilful or accidental, of members of one kin by those of another, became the cause of a claim by the offended calpulli upon that of the offender.¹⁸⁹ This claim was submitted to the tribal council by the "speaker" of the complainant kinship. He produced his evidence, sometimes even in the shape of paintings, not so much to prove the facts as to sustain his claim. From the opposite side, the "speaker" defended the interests of his clan, and he also supported his pleadings with whatever testimony he might command.¹⁹⁰ The remaining "tlatoca" listened attentively to both parties, and when the argument was concluded, they deliberated among

¹⁸⁹ H. H. Bancroft ("Native Races," Vol. II, pp. 458 and 459) was the first, to my knowledge, to call attention (in note 59) to the difference of opinion among authors in regard to the punishment of murderers. He refers to the unpublished parts of the work of Fray Diego Durán. We find in the *Código Ramírez* ("Tratado de los Ritos y Ceremonias y Dioses que en su Gentilidad usaban los Indios desta Nueva España," Cap. I, p. 103): "El matar uno á otro era muy prohibido, y aunque no se pagaba con muerte, hazian al homicida esclavo perpétuo de la mujer ó parientes del muerto, para que les sirviesse y supliesse la falta del muerto, ganando el sustento de los hijos que dejaba." This is very interesting since it shows the autonomy of the kins. The murderer stood, towards the calpulli of the slain, in the same relation as, among northern Indians, a prisoner of war did towards the hostile tribe. Both could be adopted, and this condoned the deed. The offending kin lost one member; the offended kin obtained one in return for the one that had been killed. However, this was only in exceptional cases: the rule, as established by the majority of authors was that life alone could atone for life. In the same manner, and under the same head, the contradictory reports must be placed, about the punishment of theft, which have already been noticed. There are consequently, for each crime or kind of crime, two classes; one, of such as were committed within the kin, and the other, of such as were committed without.

¹⁹⁰ *Sahagun* (Lib. VIII, cap. XV, p. 304): "Otra sala del palacio se llamaba teccali, ó teccalco. En este lugar residian los senadores y los ancianos para oír pleitos y peticiones, que les ofrecian la gente popular, y los jueces procuraban de hacer su oficio con mucha prudencia y sagacidad, y presto los despachaban; porque primeramente demandaban la pintura en que estaban escritas ó pintadas las causas, como hacienda, casas, ó malzales; y despues quando ya se queria acabar el pleito, buscaban los senadores los testigos." I quote this passage, although it applies particularly to the judicial functions of the council, because the mode of proceedings is therein illustrated. *Veytia* (Lib. III, cap. VII, p. 207), speaking of Tezcuco, is very positive: "Habia tambien abogados y procuradores; á los primeros llamaban tepantlatocani, que quiere decir *el que habla por otro*. . . ." I need not recall here that "tlatocani" (plural "tlatoca") was the title of the members of the council, and that consequently these "attorneys" belonged thereto. The same statement (derived from *Veytia* also) is found in *Bustamante* ("Tezcoco," Parte II, cap. VII, p. 191). These two works contain (in the chapters indicated) the most detailed information as to the proceedings. Still, there is evident confusion in the minds of these authors in general: they fail to discriminate between arbitration and tribal jurisdiction. The bulk of the other authorities commit the same mistake. Compare *Zurita* ("Rapport," pp. 102-103), whom *Mendieta* (Lib. II, cap. XXVIII, p. 138) has almost verbally copied. *Torquemada* (Lib. XI, cap. XXVI, pp. 354 and 355).

The absolute lack of division of powers which characterizes so well ancient Mexican society is well established by *Veytia* (III, cap. VII, p. 206), speaking of what he

themselves until they finally agreed upon an award.¹⁹¹ The same thing occurred when two calpulli claimed possession or enjoyment of the same piece of land.¹⁹² No appeal was possible to any higher authority; but every eighty days an extraordinary gathering took place at the "tecpan," consisting of the council and the executive chieftains, the war-captains of the four great quarters, the "elder brothers" of the kins, and the leading medicine-men, and any cause pending before the "tlatocan" might be deferred until the next of these general meetings; and even in case a decision had been rendered, a reconsideration thereof, on that occasion, was sometimes agreed upon.¹⁹³

calls "supremo consejo:" "Tratábanse en este consejo todo género de negocios de estado, justicia, guerra, hacienda etc., etc."

¹⁹¹ This picture is mainly based upon *Veytia* ("Historia antigua," III, cap. VII), and *Bustamante* ("Tezcoco," pp. 191 and 192). The statement in the latter is only worthy of credit because copied from the former.

¹⁹² *Veytia* (Lib. III, cap. VII, p. 207). *Clarifigero* (Lib. VII, cap. XVI, y. 483). For a copy of the paintings reproduced, see *A. de Humboldt* ("Vues des Cordillères," etc., Vol. I, plate V. Ed. 8vo).

¹⁹³ I affirm this in the face of all the authorities on the subject, who, without exception, assert that there was an appeal to the "king." The *Codex Mendoza* (plate LXX, "Declaracion de la figurado") is even very positive: "Y si era negocio de calidad del consejo. havia apelacion por via de agravio ante Montequima, en donde havia conclusion de la causa." My opinion is based on what precedes about the authority of the council, on what I expect to prove in relation to the true nature of the duties of the head-chiefs and which will hereafter follow, and on the contradictions among the authors themselves. Thus the "*Codice Ramirez*" (p. 58) places the supreme power into the hands of the councils "sin parescer de los quales ninguna cosa se habia de hacer," and (pp. 64 and 65) it does not mention any power of appeal whatever. *Zurita* (pp. 100 and 101): "Les appels étoient portés devant douze autres juges supérieurs qui prononçoient d'après l'avis du souverain." It is queer to notice, how the writers of the tezcucan school, appear eager to place the power of final decree or the decision of final appeal in a "high tribunal," or rather simply a supreme council of their tribe. *Torquemada* (Lib. II, cap. XXXXI, p. 146) mentions a supreme council, "á los quales avian de venir todas las cosas graves, y criminales, para que ellos, con el Rei, las determinasen." (Lib. XI, cap. XXVI, p. 304): "Para estos dos Jueces Supremos se apelaban las causas graves, los quales las admitian, pero no determinaban, ni sentenciaban, sin parecer, y acuerdo de el Rei." *Veytia* (Lib. III, cap. VII, p. 190) speaks of the establishment of "tribunals" by "Fasting wolf" ("Nezahualcoyotl"—properly "fasting coyote"), and adds: "pero concediendo á las partes el recurso de apelacion para el gran tribunal de justicia que erigió en su corte de Texcoco." This so-called tribunal was, as we have shown at the close of note 180, the "Council of the tribe." *Mendieta* (Lib. II, cap. XXVIII, p. 135) almost copies *Zurita*. *Sahagun* ("Historia general," etc., Lib. VIII, cap. XXV, p. 314): "y los casos muy dificultuosos y graves, llevábanlos al señor para que los sentenciasen, juntamente con trece principales muy calificados, que con el andaban, y residian." "Estos tales eran los mayores jueces, que ellos llamaban tecutlatoque. . . ." In this case the learned father speaks of tribal jurisdiction and not of arbitration. Still it is plain that he admits the council's decrees as final. The chief, "señor," appears only as member of this council, a position of which we shall hereafter speak. Without making any further quotations from similar authorities, I beg to revert to those which place, by the side of the so-called "King," an independent "supreme Judge"—the "Chhuacohuall," whose tribunal

Aside from these arbitral functions, other duties occupied the council's time at its full meetings. If any calpulli felt wronged in the distribution of the incoming tribute, it might through its delegate or "speaker,"¹⁹⁴ complain about the tribal officers answerable for it to the "tlatocan." The investiture of chiefs and officers of the kins belonged to the highest authority of the tribe

is positively mentioned as the final court of appeals. That this "Cihuacohuatl" occupied a high position, was already noticed by Cortés ("Carta tercera," Vedia I, p. 89), and subsequently, when he became still more prominent, by Tezozomoc. But Torquemada has been to my knowledge, the first one to establish his position as independent supreme Judge. It is not devoid of interest to notice what he writes about this office. ("Monarquía Indiana," Lib. XI, cap. XXV, p. 352): "Después del Rey, havia un Presidente, y Juez mayor, cuyo nombre, por razón de el oficio, era Cihuacohuatl . . . De este Presidente no se apelaba para el Rey, ni para otro Juez alguno, ni podía tener Teniente, ni substituto, sino que por su misma persona havia de determinar, y decidir todos los negocios de su juzgado, y audiencia." He further adds; "lo qual no corría en este dicho Juez Cihuacohuatl; porque de su ultima determinacion no havia recurso á otro." Fray Agustín de Vetancurt ("Teatro Mexicano," Vol. I, Parte 2a, Trat. 2º, cap. I, p. 369): "Después del Rey . . . havia un virey que llamaban Cihuacohuatl, que el rey proveía y era su segunda persona en el gobierno, de cuya sentençia no havia apelacion á otro. Tan absoluta era la autoridad que le daba, que reservando el rey en sí la autoridad real, era en la judicatura igual." These statements distinctly hint at the existence of an appellate judicial body, of which this Cihuacohuatl was foreman, and over which the so-called "King" had no control. Clavigero (Lib. VII, cap. XVI, p. 481) even states that while there was no appeal from the Cihuacohuatl whatever, there was one of these officers "at the court and the principal cities of the kingdom." These views in regard to the "Cihuacohuatl" have been plainly accepted by W. H. Prescott ("Conquest of Mexico," Vol. I, p. 29): "There was no appeal from his sentence to any other tribunal, not even to the king," and H. H. Bancroft ("Native Races," Vol. II, cap. XIV, pp. 434 and 435).

The confusion is apparent, for we have here three different views of the same case. One is that the "head-chief" was the highest appellate authority, the other that the head-chief, with the council, formed the court of last resort, and the third that a "supreme Judge" was appointed by the so-called "King" to render final decisions. Now we have already seen that the supreme authority was the council or "tlatocan," consequently what is commonly called the "king" could not be the last resort in judicial matters, still less could he appoint an officer for that purpose. Our proposition appears, therefore, sustained, that there was no appeal from the decisions of the council to any superior authority whatever.

But, finally, it was possible to reconsider, so to say, the cases decided by the council, and for such the so-called "*Nauhponhuitlatolli*" or "*eighty days-talk*" was instituted. Authorities are almost unanimous on this point, although it is commonly ascribed to Tezucoc alone, and I refrain from quoting them in detail, referring but to Bancroft ("*Native Races*," Vol. II, p. 439, etc.).

¹⁹⁴ This becomes evident from the relative positions of kin and tribe. As we shall hereafter see, the officers gathering and those receiving the tribute were tribal officers, consequently subject to the council. It was to the council, therefore, that any complaint had to be brought against them, and this could be done only through the "speaker" of a particular kin. That the tribute was distributed partly among the "calpulli" is indicated by Durán (Cap. IX, p. 79): "También diéron á sus barrios para el culto de sus dioses, á cada barrio una suerte, etc.," and Tezozomoc ("Crónica Mexicana," Cap. X, p. 18): "y aunque venían á darlo á Ytzoatl, era para todos los Mexicanos en comun."

also.¹⁹⁵ This "right to invest officers and chiefs of the kins" is commonly distorted into a right to appoint or at least to confirm an appointment or election,¹⁹⁶ whereas it was merely an act of courtesy ultimately converted into an established custom. But paramount in importance was the preservation of independence towards the outside world, and hence all relations with other tribes, and all final decisions concerning alliances, declarations of war and treaties of peace were, as we have elsewhere stated, in the hands of the council.¹⁹⁷ No raid or foray could be started unless by its direction; and delegates from foreign or hostile tribes, though not always admitted into the presence of the "tlatocan," always had to wait until that body agreed upon and formulated an answer.¹⁹⁸

¹⁹⁵ *Torquemada* (Lib. XI, cap. XXIX, p. 361): ". . . elegian Día de buen signo: en el qual llamaban á todos los señores, y principales de la Republica. y á todos los Parientes, y Amigos: los quales acompañaban al mancebo, etc., etc." (Cap. XXX, pp. 364, 365). This author copies from *Mendieta* (Lib. II, cap. XXXVIII and XXXIX, pp. 156 to 161) who partly gathers from *Zurita* ("Rapport," pp. 23 to 29). *Gomara* ("Conquista," etc., Vedia I, p. 435): "Los señores, los amigos y parientes que convidados estaban, lo subian por las gradas al altar. . . . El día que había de salir venían todos los que primero le honraron, y luego por la mañana le lavaban y limpiaban muy bien, y le tornaban al templo de Camaxtle con mucha música, danzas y regocijo. Subíanle á cerca del altar, etc., etc. . . ." Although these quotations apply mostly to Tlaxcala, the dignity of "Tecuhtli" was common among all the sedentary tribes, and the customs of investiture were also about identical. Compare, "Des Cérémonies observées autrefois par les Indiens lorsqu'ils faisaient un teclé" ("Pièces relatives à la conquête du Mexique," Ternaux-Compans, pp. 233 and 234).

¹⁹⁶ *Zurita* ("Rapport," etc., p. 47): "parceque les souverains suprêmes ne les élevalent á ces dignités qu'en récompense des exploits qu'ils avaient faits á la guerre." etc. Besides, there are numerous evidences that the older authors all believed the officers to be nominated by the highest tribal authority. The distinction was never made as between officers of the kins and officers of the tribe. I have formerly discussed the point.

¹⁹⁷ "Art of War" (p. 120). In addition to the authorities there quoted, and those alluded to in note 178 of the present essay, I beg to refer with great pleasure to a paper written by a learned Peruvian, *Sr. José Fernández Nodal* ("Législation civile comparée des Mexicains sous les empereurs Aztecs et des Péruviens à l'époque des Incas"). This memoir was presented at the "Congrès international des Américanistes," at Luxembourg in 1877, but only a short summary of it was published in the "Compte Rendu" (Vol. I, pp. 235-237). *Sr. Nodal* states that among the Mexicans' monarchy (?) was elective and controlled by a Council, "Contrôlée par un conseil suprême." It is to be sincerely regretted that this interesting paper was thus neglected.

¹⁹⁸ Evidences in regard to this latter detail are numerous. Compare *Tezozomoc* ("Crónica" Kingsborough, Vol. IX, cap. XCVII, p. 172). *Durán* (Cap. XV, p. 127): "El rey Montezuma le respondió con rostro muy alegre y amoroso, que se lo agradecía el amor que les tenían y quel era muy contento de conservar la paz y de tener con ellos perpetua amistad; pero para que estas troguas estuviesen con mas seguridad y vínculo, quel lo quería comunicar con sus grandes señores y principales y quel le daría su respuesta. El rey de Tezcuco fué aposentado á descansar en un aposento de la casa real, con mucha onra, y luego el rey mandó venir á todos los de su conserjo y á los demas señores y principales, y estando presentes, luego los propuso la plática

Such were, in a general way, the higher functions of the Mexican council, and they appear, if we are permitted to characterize them to be only arbitrativ and directive. Yet the members of that council had other duties of a purely judicial nature.

No conflict occurred between its jurisdiction and that of the kins. It was neither superior nor inferior to it, but wholly independent, even without any connection with it. Hence it extended:

1. Over the unattached class, the hangers-on to the tribe, or outcasts from the bond of kinship.¹⁹⁹

2. Over all the people composing the tribe, irrespective of kinship, at places specially placed under tribal care, or reserved for tribal business, and therefore *neutral ground* for the members of all the calpulli. These neutral localities were the official buildings, the central or tribal "house of god," and especially the great "tianquiz" or market places.

The outcasts were, happily for the preservation of tribal society, not very numerous. Still, from their very origin, they were the most disorderly part of the people and crimes were certainly more common among them than among those upon whose passions the tie of kinship and the obligations resulting therefrom acted like a wholesome check. It required a judiciary power constantly on hand to repress and punish the misdemeanors committed among this class.

The "tecpan," the great central "teocalli" and the square on which it stood, and the market, were regular meeting-places of

siguiente, etc." (Cap. LX, p. 473): "Monteguma, aplañándose dellos, los mandó aposentar, y llamando su consejo, propusoles la demanda que tratan." *Codice Ramirez* (p. 81): "El Rey Itzcohuatl mostró gran contento con la embajada respondiendo con muy gratas palabras; mandó aposentar á los mensajeros, y hourarlos, y tratar como á su propia persona, diziéndoles que descansassen, que el día siguiente les daría la respuesta." See also *Torquemada* (Lib. XIV, cap. I, p. 83): "Acabada la Embaxada, si el Embaxador no era de muy gran Principe, no se le respondia cosa, hasta otro día; salian con él algunos, acompañándole á la Calpíxen, adonde se proveía de lo necesario, y en el entretanto el Señor comunicaba con los de su Consejo lo que se havia de responder, lo qual hacia uno de ellos, y no él." But the most complete picture of such delegations and the manner in which they were received is found in *Fetancurt* ("*Tenuto Mexicano*," Parte II*, Trat. IIa, cap. II, pp. 378 and 379). It is too long to be copied. I merely allude to the words: "Acabada la embajata, le volvian á la posada mientras se juntaban para la respuesta." It has been adopted by *Clavigero* (Lib. VII, cap. XI, pp. 470 and 471).

¹⁹⁹ The unattached class was under protection of no kin; therefore, if such a "bonded man" made his escape to the Tecpan, he became liberated from his bond. Already mentioned by *Gomara* ("*Conquista*," Vedia, I. p. 442), and subsequently confirmed by others.

people from *all* the calpulli, but over which no single kin could exercise any control.³⁰⁰ This control had been delegated to the

³⁰⁰ In regard to the "teopan," the simple term "casa de comunidad," used particularly by *Torquemada* (Lib. VI, cap. XXIV, p. 48, and again Lib. XIII, cap. XXX, p. 477): la "Teopan, que es el palacio," explains much. It is, besides, self-evident that the tribal places of business and of worship were under the control of no particular kin, being expressly reserved for the tribe. There is, however, no definite expression as yet, in fact it hardly amounts to a clear conception, of the number and position or location of the original "tlanquiz" of Tenuchtitlan. There are four eye-witnesses of the conquest reporting upon the markets: Cortés, Andrés de Tapia, the anonymous conqueror, and Bernal-Díez de Castillo. I quote these in succession. Cortés ("Carta Segunda," Vedia, I, p. 83): "Tiene esta ciudad muchas plazas, donde h y continuos mercados y trato de comprar y vender. Tiene otra plaza tan grande como dos veces la ciudad de Salamanca, toda cercada de portales al redor, donde hay cotidianamente arriba de setenta-mil animas comprando y vendiendo, . . ." "Carta Tercera," (p. 74): "hasta otra puente que está junto á la plaza de los principales aposentamientos de la ciudad." Note 2 of the Archbishop Lorenzana: "Antes de llegar á la plaza de la Universidad hay muchas puentes, y naturalmente habia aqui desta plaza ó mercado, que era muy grande." Id., (p. 78): "E porque este trabajo era incompartible, acordó de pasar el real al cabo de la calzada que va á dar al mercado de Tenuchtitlan, que es una plaza harto mayor que la de Salamanca, y toda cercada de portales á la redonda;" (Id., p. 79): "seguimos nuestro camino, y entramos en la ciudad, á la cual llegados, yo reparti la gente desta manera: habia tres calles donde lo que teniamos ganado, que iban á dar al mercado, al cual los indios llaman Tianguilco, y á todo aquel sitio donde está llaman de Tlatelulco; y la una destas calles era la principal, que iba á dicho mercado, . . . Las otras dos calles van desde la calle de Tacuba á dar al mercado." Id. (p. 81), after the repulse of the Spaniards: "todos los españoles vivos y muertos que tomaron los llevaron al Tlatelulco, que es el mercado." Id. (p. 85): "E aquel día acabamos de ganar toda la calle de Tacuba y de adobar los malos pasos della, en tal manera que los del real de Pedro de Albarado se podian comunicar con nosotros por la ciudad, é por la calle principal, que iba al mercado, se ganaron otras dos puentes y se cogió bien el agua. . . ." Id., "y seguimos la calle grande, que iba á dar al mercado;" (p. 80): "Otro día siguiente, estando aderezando para volver á entrar en la ciudad, á las nueve horas del día vimos de nuestro real salir humo de dos torres muy altas que estaban en el Tlatelulco ó mercado de la ciudad." Andrés de Tupia ("Relacion," etc., in *Col. de Doc.*, II, p. 582): mentions only the "patio de los lololos." "El Conquistador anónimo" (*Col. de Doc.*, I, p. 312): "Sono nella città di Temestitan Messico grandissime et bellissime piazze, dove si vendono tutte le cose che usana fra loro, et specialmente la piazza maggiore che essi chiamano el Tatlulula, che puo esser così grande como sarebbe tre volte la piazza di Salamanca, et seno all'intorno di essa tutti portici; . . ." (p. 304): "Et oltre q'esta gran piazza ve no sono dell'altre et mercati in che si vendono cose da mangiare in diverse parti della città." Bernal Díez de Castillo ("Historia verdadera," Vedia, II, cap. XCII, p. 80): "y cuando llegamos á la gran plaza, que se dice el Tatlulco, como no habiamos visto tal cosa, quedamos admirados de la multitud de gente y mercaderías que en ella habia. . . ." He also states that the "gran plaza" was "cercado de portales." (Cap. CLII, p. 183): "que si nos parecia que fuésemos entrando de golpe en la ciudad hasta entrar y llegar al Tlatelulco, que es la plaza mayor Méjico, que es muy ancha, . . ." (Cap. CLV, p. 198): "que les entrásemos todo cuanto pudiésemos hasta llegarles al Tlatelulco, que es la plaza mayor, adonde estaban sus altos cues y adoratorios." We notice at once a contradiction. Cortés first mentions a market of Tenuchtitlan, and afterward he calls it of Tlatelulco. Archbishop Lorenzana identifies it with the "plaza de la Universidad," or in the neighborhood of the Cathedral. See *Cerrantes-Salazar* ("Tres Dialogos," p. 9): "en la esquina de las calles del Arzobispado y Seminario."

There were two great market-places in ancient Mexico, one of which was in Tenuchtitlan, and the other in the conquered neighboring pueblo of Tlatelulco. This is very

"tlatocan" as a consequence of the formation of the tribe. Crimes committed at such localities were punished with unusual severity, because they were offences desecrating *neutral* ground which was

plainly stated by *Torquemada* (Lib. XIV, cap. XIII, p. 555), and it would even appear as if, notwithstanding the importance attached to Tlatelulco by many authors, that the principal market was the one mentioned by this author as "el que está en la Poblacion de San Juan . . .," and consequently the proper "tlanquiz" of the Mexican tribe. This could only be neutral ground, over which no single kin exercised any authority. It may have been different in regard to the "tlanquiz" of Tlatelulco; at least the following indications of *Durán* (Cap. XXXIV, p. 370) deserve full attention: "Fecho esto mandó el rey que aquella plaza y mercado que ellos ganaron, pues los tlatelulcos no tenían mas tierra, que fuese repartido entre los señores y que la parte que á cada uno cupiese, que de todos los tlatelulcos que allí hiciesen asiento, de todo lo que vendiesen les diesen alcauala, de cinco uno, y así se repartió la plaza entre todo, de donde cada uno oabrua alcauala de lo que en el lugar que le aua cauido se vendía." The above is not quite definite enough, because the "plaza y mercado" of which the friar speaks, is evidently the one mentioned by him (p. 200): "y encerrándoles en la plaza de su mercado, haríendose los tlatelulcos fuertes, no dexauan entrar á la plaza ninguno de los Mexicanos en ella," whereas he says (p. 370): "que allí hiciesen asiento," as if the place was built over. The fact that the "tlanquiz" of Tlatelulco was "distributed among the Mexicans" is further asserted by *Tesozomoc* (*Crónica Mexicana*, Cap. XLVI, p. 75, Kingsborough, Vol. 9): "Axayaca mandó tambien se hiciese repartimiento del tlanquiz de Tlatilolco á los Mexicanos, y comenzaron á medir primera suerte Axayaca. luego á Zihuacoatl Tlacaeleltzin, luego par su orden Tlacochcalcatl, y á todos los capitanes, que fué tenido el tlanquiz en mas de si ganaran cien pueblos." It would therefore appear, if we interpret this "distribution" as it should be done, namely: as a *division of spoils among the kins*, that the latter claimed a share of tribute from the traffic or barter going on in the "tlanquiz" of Tlatelulco, a fact corroborated besides by that other statement of *Durán* (p. 200): "El rey le mandó, que pues auian sido traidores á su corona real, que de allí adelante queria y era su voluntad que aquella parcialidad Mexicana del tlattelulco le fuesen tributarios y pecheros como las demas ciudades y provincias, . . ." This, and the uncertainty as to which tlanquiz is always meant, favors the assumption that *Gomara* ("Conquistada," p. 349, Vedia I) mentions Tlatelulco when he says: "Los que venden pagan algo del asiento al Rey, ó por alcabala ó porque los guarden de ladrones." *Cortés* ("Carta Segunda," pp. 32, 33 and 34) does not mention it, for the words: "donde están personas por guardas y que reciben certum quid de cada cosa que entra" do not apply to the market which he describes as having visited and which, in spite of *Bernal-Díaz* ("Hist. Verdadera," Cap. XCII, p. 89) I still believe to have been that of Tenuchtitlan, and not that of Tlatelulco. *Cortés* is strictly followed by *Oviedo* (Lib. XXXIII, cap. X, pp. 200 and 201) whereas *Herrera* (Dec. II, lib. VII, cap. XVI, p. 193) copies *Gomara*.

I have dwelt thus long on this question because it disposes of the notion that the "government" of Mexico levied a tax on the traffic of the members of the tribe. This tax limits itself to a tribute paid by the subjected tribe of Tlatelulco alone, because, as *Durán* says (p. 370) "they had no more soil than that of their tlanquiz." This tax was distributed among the kins, like any other tribute. But it does not follow that therefore the kins exercised judicial power over the Tlatelulcan market. This power either remained with the Tlatelulcan tribe, or devolved upon the officers of the tribe of Tenuchtitlan. The former is more likely, although the latter might also have been the case since the Tlatelulcans were treated with great severity, as traitors and outcasts (*Durán*, Cap. XXXIV, pp. 200-271), in which case the tribal authorities would have had to punish them.

That the central or tribal "teocalli" and the courts surrounding it were committed to the care of the tribe, as representing all the kins, on equal terms, in the share which each had in it, is self-evident, and needs no further proof.

then respected as open to use for all the kins in common.²⁰¹ So many people met there daily, that the daily exercise, at least the presence, of judicial authority was absolutely necessary.²⁰²

²⁰¹ *Las Casas* ("Historia apologética," Cap. 214, in note XLV of Lord Kingsborough. Vol. VIII, p. 124): "pero cuando reñían en los mercados, como á escandalosos y alborotadores del pueblo eran muy gravemente castigados." *Sahagún* (Lib. VIII, cap. XXXVI, p. 323) says even of those who disposed of stolen articles: "the Judges and chiefs took them and sentenced them to death." *Torquemada* (Lib. XII, cap. V, p. 381): "El que hurtaba en la Plaza ó Mercado, que llaman Tianquizco, luego allí era muerto á palos, por tener por muy grave culpa, que en semejante lugar, y tan publico, huviese tanto atrevimiento." *Clavigero* (Lib. VII, cap. XVII, p. 484): "He who ehanged the measures established by the government, in open market, was executed on the spot," and (p. 487): "He who stole in the market, was at once beaten to death." *Mendieta* (Lib. II, cap. XXIX, p. 138): "Porque tenían por grave el pecado cometido en la plaza ó mercado."

²⁰² We have again here the eye-witnesses. *Cortés* ("Carta Segunda," Vedia, I, p. 33): "Hay en esta gran plaza una muy buena casa como de audencia, donde están siempre sentados diez ó doce personas, que son jueces y libran todos los casos y cosas que en el dicho mercado acenecen, y mandan castigar los delinquentes. Hay en la dicha plaza otras personas que andan continuo entre la gente mirando lo que se vende y las medidas con que miden lo que venden, y se ha visto quebrar alguna que estaba falsa." *Bernal Díez de Castillo* (Cap. XCII, p. 89): Vedia, II, "y tenían allí sus casas, donde jugaban tres jueces y otros como alguaciles ejecutores que miraban las mercaderías." These two statements, with more or less variation, are at the base of all that has been subsequently said on this subject, except by *Sahagún* (Lib. VIII, cap. XXXVI, p. 323): "El señor tambien cuidaba del tianquiz y de todas las cosas que en el se vendian por amor de la gente popular, y de toda la gente forastera que allí venia, para que nadie los hiciese fraude, ni sin razon en el comercio de la feria. Por esta causa ponian por orden todas las cosas, que se vendian cada una en su lugar, y elegian por la misma oficiales que se llamaban tianquizpantlayacaque, los cuales tenían cargo del mercado, y todas las cosas que allí se vendian de cada género de mantenimientos ó mercaderías; tenía uno de estos cargo para poner los precios de las cosas que se vendian y para que no huviese fraude entre los compradores y vendedores." "Tianquizpantlayacaque" decomposes into "Tianquizpan," "feriar, o tratar en mercado," *Molina* (II, p. 114), and "Tlayacatl," "cosa primera ó delantera" (Id., p. 120); consequently, "the foremost or first ones of those who trade in open market." We have to discriminate therefore between these and such officers as "señor" ("están siempre sentados," says Cortés) within that "very good house" in the market, or rather close by, and acted as Judges. *Herrera* (Dec. II, Lib. VII, cap. XVI, p. 195) says this house was "cerca del Mercado"—a statement which he afterwards changes to "en la plaza de Mexico" (Dec. III, Lib. IV, cap. XVII, p. 137). We are now informed by *Torquemada* (Lib. XIV, cap. XIII, p. 555) that the *tecpán* of Tlatelulco "que son las Casas de Cabildo, y Audiencia" was, at his time, on one of the sides ("acera") of the market of Tlatelulco, and it appears to have been customary for the natives to have the official building facing the "tianquiz." Such was the case at Texcoco if we are to believe *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXVI, p. 247): "Le palais avoit deux cours, dont la première, qui étoit la plus grande, servoit de place publique et de marché; elle est même encore aujourd'hui destinée à cet usage;" and if the market of Tenuchtitlan really was where Archbishop Lorenzana places it (see note 200), then it is evident that the Mexican *tecpán* must have been very near it, if not actually facing the square. The "great house" mentioned by the eye-witnesses quoted, was therefore, in all probability, but the council or official-house of the tribe, and the old men who, in number from three to twelve, are said to have officiated as "Judges," were members of the "tlatocan" or supreme council on judicial duty, as we shall hereafter see. Those officers who circulated among the people maintaining peace and order, were executive

It therefore demanded the daily attendance at the official house of the tribe of a body of men sitting as "judges." The decisions of these judges had to be final even in matters of life and death. Therefore the chiefs composing the highest authority of the tribe, the members of the council or "tlatoca," were also its supreme judges. It is stated that for this daily work the twenty "speakers" were subdivided into two bodies sitting simultaneously in two different halls of the "tecpan." One of these bodies is called "court of the nobles" because it attended, not merely to tribal cases, but especially to the preparatory business of government in general, whereas the other limited its decrees to judicial questions only.³⁰³

officers delegated for that special purpose, and, as we shall find, probably under orders of the military commanders of the tribe.

³⁰³ This division of the council into two bodies for the purpose of greater dispatch of judicial work is particularly affirmed by *Sahagun* (Lib VIII, cap. XIV, p. 303, Cap. XV, p. 304, and Cap. XXV, pp. 313 and 314), who, however, contradicts himself in regard to the position and rank of his "Judges." Thus (p. 303) he calls his officers of the "sala de la judicatura," "el rey, los señores, cónsules, oidores, principales nobles" as distinguished from those of the "audiencia de la causas civiles," whom he designates as "los senadores y los ancianos," thus intimating, if not asserting, that the former were superior to the latter in rank and power. The hall wherein the former met, is called "tlacxitlan," the latter "teccalli." I shall return to these terms again. He further asserts (p. 314), speaking of the former: "Estos tales eran los mayores jueces, que ellos llamaban tecutlatloques," and establishes them as a court of appeal for the lower court. Now (Cap. XXX, p. 318) he says: "Juntábanse los senadores que llamaban tecutlatloques . . ." Consequently, he tacitly admits that the "senadores" who, according to him, composed the "lower" court were also the equals of those of the higher, and all belonged to the same class of officers. Finally, his picture of the duties of both bodies is rather obscure. He even (p. 314) might be construed so as to establish three courts. If we now examine the names given by him, we find that of the "lower" to be "house of chiefs," from "tecuitli" and "calli," house. Indeed, *Molina* (II, p. 92) has "teccalli," "casa, o audiencia real." "Tlacxitlan," however, signifies (II, p. 120) "en lo bajo, o al pie de los arboles, o de cosa semejante." The proper derivation, however, is from: "ni tlacxitoca" "to correct writings, or count over what has been already counted" (p. 120), which would indeed correspond to a "court of appeals." "To appeal" is "nitlacuepa;" "appeal," "tlacuepaliztli; ocoeccan neteihulliztli," *Molina* (I, p. 12). It stands properly for the act of demurring, or of returning, folding, doubling up, and it is not likely to have been used by the natives to define an appeal in our sense of the word. Father Sahagun has probably introduced the word "tlacxitlan" himself. At all events, he is responsible for the notion of a superior body of judges, to whom a lower court, sitting in the same house, referred all cases of importance, contenting itself with taking testimony and despatching unimportant cases; while at the same time he tells us that the members of both groups held the same office, and were consequently equal and had the same title. This title we have found to be that of the members of the council, consequently the two groups formed but fractions of that body, co-ordinated and assisting each other, and not a higher and a lower branch of a tribal judiciary.

Father Sahagun and contemporary authors of the Franciscan school, whose writings have just now come to light in the "*Libro de Oro*," can easily be traced as the source of most of the later pictures of Mexican judicial customs as in the present instance. Thus his highest tribunal of thirteen "senadores" reappears in *Gomara* ("*Conquista*," p. 442,

We thus have found in the "tlatocan" or council, the high directive authority of the tribe, the arbitrator between its organic component parts, and the chief judicial power within the tribe. It is easy to recognize in it a counterpart to the council of the kin.

Like the kin also which, subordinate to its councils decrees had two superior officers for the execution thereof, the tribe had *two chief executive functionaries*.

Even at a comparatively remote period in the history of the ancient Mexicans we may discern two offices, not formally created, but naturally growing from what was left of tribal organization, which mark the beginning of a chief tribal executive. One of these is the "wise old man" conducting the "talk;"²⁰⁴ the other is the "big warrior" who led the braves to battle.²⁰⁵ The former subsequently became "foreman" in the council, the latter "war-chief" to the tribe. There are indications to the effect that, for a while, both offices were held by one person. From the time the confederacy had been formed, however, we recognize two chief executive agents,²⁰⁶ one of which is called the "Snake-woman"

Vedia I): "Los Jueces eran doce . . ." with a higher court of two; therefore, in all fourteen, equal to the thirteen of Sahagun with the "Señor" added. *Zurita* ("Rapport," etc., pp. 100 and 105): "Les douze Juges d'appel . . ." *Mendieta* (Lib. II, cap. XXVIII, p. 135) copies *Zurita* almost literally. By the side of this early Franciscan group of writers, there is the picture drawn by the two great Franciscans, Torquemada and Vetancurt, representing a supreme Judge, "Cihuacohuatl," and four tribunals beneath him in authority. This picture is evidently based on such paintings as the "*Codex Mendoza*" (plates LXIX and LXX). In my opinion the thirteen Judges of Sahagun should be connected with the judicial offices mentioned by Cortés as sitting at the "tecpan" (see note 202), rather than regarded as constituting a court of appeals.

Finally, I refer to *Iztzilzochitl* ("*Hist. des Chichimques*," Cap. XXXVI and XXXVII), *Veytia* (Lib. III, cap. VII, pp. 199 and 200) and others, in regard to Tezcuco. While they distinctly prove the subdivision, for judicial work, of the supreme council into two sections, they also show in a very marked manner, the confusion and contradiction arising from a misconception of the real case.

²⁰⁴ Perhaps the earliest mention of such a "wise old man," foremost in the "talk," among the Mexicans proper, is that of the tale of the crafty old men, Huitziton and Tecpatzin, who are said to have persuaded the Mexicans to emigrate from Aztlan, as related by *Torquemada*, who is often copied (Lib. II, cap. I, p. 78). In early times they are also called Captains and leaders, and must not be confounded with the "medicine-men" (id., p. 78). Subsequently these latter sometimes appear as leading speakers. Much information can be gathered on this point by carefully and critically reading *Veytia* (Lib. II, cap. XII, XIII, XV and XVII), *Codice Ramirez* (pp. 25 to 38), *Durán* (Cap. IV, V and VI), *Tezozomoc* (Cap. I, II and III).

²⁰⁵ *Torquemada* (Lib. II, cap. II, pp. 80 and 81). *Vetancurt* ("*Teatro Mexicano*," Parte IIa, Trat. I, cap. IX, pp. 260, 261 and 262). They merely show that the office of "big warrior," existed.

²⁰⁶ This apportionment of the duties of chief-executive among two heads is found in many tribes of Mexico and Central America. Thus in Tlaxcallan, Maxiscatzin and Xicotencatl, the two head-chiefs, were alike and equal in power. (*Cortés*, "*Carta Segunda*" (pp. 118, 46). *Bernal Díez de Castiello* (Cap. LXVII, p. 60): "los dos mas prin-

("Cihua-cohuatl,") and the other (erroneously termed "King"), the "chief of men" ("Tlaca-teculitli").

The "CIHUA-COHUATL" was elected by the council for life, or

cipales caciques." *"Anonymous Conqueror"* (p. 388): "anchora che in certo modo si habbia rispetto á uno che e'el maggior Signore, che tiene teneva ua Capitano generale per la guerra." *Motolinia*, "*Hist de los Indios*," etc. (Trat. III, cap. XVI, pp. 229 and 230). *Oviedo* (Lib. XXXIII, cap. III, p. 272) copies Cortés. *Gomara* (p. 332). *Torquemada* (Lib. XI, cap. XXII, p. 347) says four, of which Maxiscatzin was captain; though this is contradicted by the conquerors. Xicotencatl being war-chief. *Herrera* (Dec. II, lib. VI, cap. X, p. 152) reports the speech of Xicotencatl: "que bien debia de saber, que era Xicotencatl Capitan General de la Republica de Tlaxcala." and especially his interesting tale of the Tlaxcaltecan council in Cap. III, pp. 139 and 140. *Tezozomoc* (Cap. LXXXVI, p. 150): "el rey Xicotencatl," (Cap. LXXXVII, p. 152): "el rey Maxiscatzin." About Chulco, compare "*Tenure of Lands*" (p. 397, note 16), also about Xochimilco and the Tecpanecas. In regard to the Matlatzinca, *Zurita* ("Rapport," etc., p. 389) says there were three chiefs, who occupied the highest power in succession. This statement is copied by *Herrera* (Dec. III, lib. IV, cap. XVIII, p. 139). The *Totonacas* had two chiefs. *Durán* (Cap. XXI, p. 181. Cap. XXIV, p. 306). The "Cazonzi" of Michuacan is represented by *Herrera* (Dec. III, lib. III, cap. V, p. 86, VI, p. 87) as being assisted by "his captain-general," and the anonymous document copied by *Don Florencio Junér* from the Codex C-IV-5 of the Escorial Library and published, without date, though evidently written between 1534 and 1551, entitled "*Relacion de las ceremonias y ritos, poblacion y gobierno de los indios de la provincia de Mechuacan, hecha al Ilmo Sr. D. Antonio de Mendoza, Virey y Gobernador de Nueva España*" says ("Primera Parte," p. 13): "pues habia un rey y tenia su gobernador, y un capitan general en las guerras, y componiase como el mismo cazonzi." This is very significant, especially because it is represented as being instituted by divine will. "Dicho sea en la primera parte, hablando de la historia del dios Curicaberis, como los dioses del cielo le dijeron como habia de ser rey, y que habia de conquistar toda la tierra, y que habia de haber uno que estoviesse en su lugar, que entendiessse en mandar traer leña para los que." The evidence is positive about the Q'Quiché of Guatemala, and furthermore very interesting. *Zurita* ("Rapport," etc., pp. 405 and 406) mentions three chiefs, in a manner exactly similar to those of Matlatzinco, and *Herrera* (Dec. III, lib. IV, cap. XVIII, p. 140) follows him implicitly. *Torquemada* (Lib. XI, cap. XVIII, pp. 338 and 339) is of the same opinion, although it is easy to see that in fact there were two head-chiefs and not three, since he says: "Era el primero de todos el Rey actual; es á saber, el Abuelo: luego el Rey electo para despues de sus Dias; tras el, el que tenia nombre de Electo, etc." Consequently there were always two with the principal title. *Pedro de Alvarado* ("*Relacion á Hernando Cortés*," Utiatlan, 11 of April, 1524. Vedia I, p. 458) speaks of "cuntro señores de la ciudad de Vilatan." Another eye-witness of the conquest of Guatemala, *Bernal Díez de Castillo* (Cap. CLXIV, p. 220) speaks of "dos capitanes señores de Utiatlan." We have fortunately, in regard to the tribes of Q'Quiché language, a very positive source of great value. This is the "*Popol-Vuh*" (p. 339). Enumerating the "Nim-Ha Chl Cavikib," it specifies from the fourth generation on ("U. cah. le"), always two chiefs, stating positively: "Oxib-Quieh, Belehob-Tzi, u cablahu-le ahauab. Are-cut que ahauaric ta x-ul Donadii, x-e hitzxic rumal Caxtilan vinak" (p. 338). Consequently Alvarado executed two chiefs. Besides (p. 340), it even mentions their last successors, with Spanish names. At the close three "great-elected ones" ("Nim-Chocob") are mentioned, but only two are named, the one from "Nihali" and the other from "Ahau-Q'Quiche." We find here the exact counterpart of the Mexicans, before their fight with Tlalteculco.—two chiefs of Mexico, and two chiefs of Tlalteculco, Moquihuix and Teconal. See the authors on that subject. In regard to the Maya of Yucatan, see *Lizama* ("*Devocionario de Nuestra Señora de Itzamal*," § IV), also *Vilagutierrez y Sotomayor* ("*Historia de la Conquista y Reducciones de los Itz'atx y Lacandonces*," Lib. VIII, cap. XVI, p. 514)

during good behavior.²⁰⁷ We find in the Codex Mendoza — the earliest date connected with the office — the symbol of “snake-woman” affixed to the head of “Handful of Reeds,” who was inaugurated “chief of men” in 1375.²⁰⁸ The inference may be permitted, therefore, that at one time both offices were held by one and the same incumbent. At all events, the “Cihuacohuatl” becomes prominent only after the formation of the tri-partite confederacy embracing the Nahuatl tribes of Mexico, Tezcucan, and Tlacopan.²⁰⁹ But the position which he occupies thereafter is a

²⁰⁷ Most of the older authors assert that the “Cihuacohuatl” was appointed by the “King.” How was it possible for an officer to appoint his own equal, or associate officer? *Torquemada* (Lib. XI, cap. XXV, p. 352), says: “Después del Rei, havia un Presidente, y juez mayor, cuió nombre, por rason de el oficio, era Cihuacohuatl: esto oficio se proveia por el mismo Rei;” and again he concedes to the Cihuacohuatl “porque de su ultima determinacion no havia recurso à otro aqui parece lo mismo que reservando el Rei Mexicano para si, la autoridad Real, le hace su igual en la judicatura; y añade, que parte de sus Determinaciones, y Sentencias, no tengan recurso al Rei, que es condicion, y calidad, que engrandece mas la Persona de el Cihuacohuatl.” Now, either the Mexicans were under a constitutional monarchy of the most improved kind,— of which there is no evidence since there was not even a division of powers,— or else the Cihuacohuatl was not appointed, but elected in true democratic fashion. *Fetancurt* (Parte II, Trat. II, cap. I. p. 369) is still plainer; “Tan absoluta era la autoridad que le daba, que reservando el rey en si la autoridad real, era en la judicatura igual.” Such an officer could only be appointed (if he was appointed and not elected), by the highest authority of the tribe, which was the council. Such is the version of *Tezozomoc* (“*Crónica*” Cap. LXXIX, p. 137): “y acabado de celebrar su entierro y quemazon de su cuerpo, que lo sintió mucho el rey Ahuitzotl, pusieron en su lugar su hijo Tlilpotoqui, Zihuacohuatl por sobrenombre.” *Códice Ramírez* (p. 67): “Antes que fuesse coronado recién electo adolesció el famoso y sabio capitán Tlacaélel, de la qual enfermedad murió; en el artículo de su muerte llamó al Rey electo y le encargó mucho á sus hijos, especialmente al mayor, que daba muestras de ser muy valeroso, y habia hecho grandes hazañas en las guerras. El nuevo Rey por consolarle despues de haberle hablado muy tiernamente con muchas lágrimas, hizo llamar á los de su consejo real y rodeados todos del lecho de Tlacaélel mandó llamar al Rey al hijo mayor de Tlacaélel, y alli en presencia de su padre y de su consejo, le dió el mismo oficio de su padre, de capitán general y segundo de su corte con todas las preeminencias que su padre tenia.” Even if there had been such an officer as a “King of Mexico” he could not have “appointed” anybody before his coronation. The ceremony indicated was therefore an election by the council. This is fully confirmed by *Durán* (Cap. XLVIII, p. 381): “llamando al hijo mayor, con parecer de todos los grandes, lo puso en la misma dignidad que el padre auia tenido, que era ser segundo despues del Rey en la corte, y mandó fuesse honrado con la mesma veneracion que su padre auia sido jurándoles todos por principe de México, al qual le fué puesto el nombre de Cihuacatl.”

²⁰⁸ “*Codex Mendoza*” (Tab. II), and the explanation says: “Las dos figuras con sus titulos é nombres de Acamapichtli son una misma cosa reservada en substancia, por que la primera figura demuestra el principio subcesion del dicho señorío . . .” In note (p. 8, Vol. VI) of “*Antiquities of Mexico*,” Lord Kingsborough adds the very sensible remark: “The first figure probably denotes that Acamapichtli, before he was elected King, possessed the title of Cihuacohuatl, or supreme governor of the Mexicans; when Mexico afterwards became a monarchy, this title was retained.” The token for “Cihuacohuatl” a female head surmounted by a snake, is also found in the pictures of *Durán* (Lam. 8a).

²⁰⁹ *Durán* (Cap. XXIV, p. 205): “Monteçuma se volió a cliauacatl Tlacaélel, que

very important one. The most specific Mexican chronicles call him "coadjutor to the King," "second King," "governor."²¹⁰ By other authorities he is mentioned as "vice-roy,"²¹¹ and more frequently yet as "supreme judge."²¹² Finally, eye-witnesses of the conquest apply to the "snake-woman" the titles of "keeper of the tribute"²¹³ and "captain-general" of the Mexicans.²¹⁴

le aña puesto por renombre y grandeza aquel nuevo ditado que." *Tezozomoc* ("Crónica," cap. XXXIX, p. 35) mentions the title together with the first actions of "wrathful chief," the Elder. But it also appears to have been very much older. *Ixtlilxochitl* ("Relaciones históricas" *Segunda Relacion*, p. 323, Vol. IX of Kingsborough), speaking of the migrations of the Toltecs says: "llegaron a Xulisco, tierra que estaba cerca de la mar, y aquí estuvieron ocho años, siendo descubridor Zuhcohuatl, también uno de los cinco capitanes inferiores." *Feytla* (Lib. I, cap. XXII, p. 320) attributes to the same the discovery of another region. It appears as if this title.— whose origin we may speculate upon but, as yet, without any hope of positive results,— was always in existence, but appeared as a distinct office only after the confederacy had been formed. A historical question of some interest looms up here: whether or not the first reported incumbent of the office after the formation of the confederacy, Atempanecatli Tlacaeleltzin, really existed. *Torquemada* (Lib. II, cap. LIV, p. 171) denies his existence, and perhaps hints at the "Códice Ramírez" when he speaks of "la mala, y falsa Relacion, que de esto tuvo, que yo tengo en un poder escrita de mano, con el mismo language, y estilo." Sr. José F. Ramírez already noticed this sally of the provincial, in note 1 (p. 382) of *Durán*, "*Hist. de las Indias*," etc., and recognized it at once as applying to the Códice R. *Feytla* (Lib. II, cap. I, p. 82, etc.) acknowledges the existence of Tlacaelelt, so does of course *Acosta* (Lib. VII, cap. 14, 15, 16, 17 and 18), and all those who followed the same sources as the "Códice Ramírez." The present city of Mexico, however, has two monuments which, to my judgment, establish beyond a doubt the existence of this Tlacaelelt. One of these is the "Stone of Sacrifice," and the other a commemorative slab, figured and described in No. 2 of Vol. I. "*Anales del Museo Nacional de México*," by the great Mexican scholar, Sr. Orozco y Berra. See my article in No. I, Vol. II of the "*American Antiquarian*," "*The National Museum of Mexico and the Sacrificial Stone*" (pp. 23 and 27).

²¹⁰ For these titles I refer in general to the *Códice Ramírez*, *Durán*, and *Tezozomoc*. Quotations are useless and would only serve to increase the size of the volume.

²¹¹ Already *Tezozomoc* mentions him a "teniente" *Torquemada* (Lib. XI, cap. XXV, p. 352). *Vetancurt* ("*Teatro Mexicano*," Parte IIa. Trat. II^a, cap. I, p. 369): "Después del Rey que heredaba, como se ha visto guardando el orden de la sangre real, había un virey que llamaban Cihuacohuatl, que el rey proveía y era su segunda persona en el gobierno, de cuya sentencia no había apelación al rey."

²¹² *Torquemada* (Lib. XI, cap. XXV, p. 352). *Vetancurt* ("*Teatro*," p. 369). *Clavigero* (Lib. VII, cap. XVI, p. 481). *Prescott* ("*Conquest*," Bk I, cap. II, p. 39). *H. H. Bancroft* ("*Native Races*," Vol. II, cap. XIV, pp. 434 and 435). *Códex Mendoza* (Tab. LXIX, "Mxcoatlilotlac, Justicia mayor").

²¹³ *Bernal Díaz de Castillo* ("*Hist. Verdadera, etc.*," Cap. XCI, p. 87, Vedia II): "Acuérdome que era en aquel tiempo su mayordomo un gran cacique que le pusimos por nombre Tapia, y tenía cuenta de todas las rentas que le traían al Montezuma, con sus libros hechos de papel, que se dice amatl, y tenía destos libros una gran casa dellos." Now this "Tapia" reappears again as "governor" of Mexico in different places. "*Relacion de la Jornada que hizo Don Francisco de Sandoval Acacitli, Cacique y Señor Natural que fué del pueblo de Tlalmanalco*" ("Col. de Documentos." Icazbalceta, p. 315, Vol. II): "y á solos los Mexicanos llevó, y fueron por sus caudillos Tapia y D. Martín el de Tlatelulco." "*Cuarta Relacion Anónima de la Jornada de Nuño de Guzmán*" (Col. de Doc. II, p. 471): "Viendo el señor desta cibdad de México, que se llama Tapia." *Letter of the "Oydores" Salmeron, Maldonado, Ceynos, and Quiroga*

Every one of these designations conveys a certain amount of truth, though none of them adequately defines the office, the true nature and position of which become clear only through a glance at its early history. Tribal executive as a permanent office, (which must always be distinguished from a hereditary dignity), was created under the pressure of extreme need. The warrior who enjoyed the confidence of the tribe, who was not only daring and brave, but had also given proof of wisdom in the councils, became the people's choice as leader. The Mexicans were then in an attitude of defence; their own existence was at stake, and it was but natural, therefore, that the leading "talk" should be on military subjects, and that consequently the prominent war-captain should become the prominent "speaker," or foreman of the council.²¹⁵ In this manner we come to notice but *one* executive chief until the confederacy was formed. His duties were plain, even simple, at that time. He resided at the official house and superintended the exercise of tribal hospitality there; he was foreman to the council, and the leading executor of its decrees as far as tribal jurisdiction extended; he controlled the receiving and housing of the modest crops gathered from the "lands of the official-house" (tecpan-talli),²¹⁶ which, together with the customary pres-

(2d "Recueil" of "Ternaux Compans," dated Mexico, 14 August, 1531): "Ainsi l'on dit qu'un certain Tapico, qui gouvernait la partie du Mexique que l'on appelle Temixtitlan." I find also the following in the municipal records of Mexico: "*Actas de Cabildo*" (Vol. I. p. 75; "Viernes 17 de Agosto 1526, años"): "Este día de pedimento de Diego de Ordáz vecino de esta Ciudad le hizieron merced de le confirmar cierta compra que hizo de Guanachel cacique que se llama Tapia de un sitio de casa que esta cabe San Francisco."

The "gobernador" of Mexico, after the conquest, and restoration under Spanish rule, was the former "*Cihuacohuatl*." This is plainly stated by Cortés ("*Carta Cuarta*," Vedia I, p. 110): "hize á un capitan general que en la guerra tenia, y yo conocia del tiempo de Mutezuma, que tomase cargo de la tornar á poblar. Y para que mas autoridad su persona tuviese, tornéle á dar el mismo cargo que en tiempo del señor tenia, que es cihuacoatl, que quiere tanto decir como lugar-teniente del señor." Therefore the appellation of Bernal-Diez, applies evidently to this officer.

²¹⁵ Cortés ("*Carta Tercera*," p. 8). "*Carta Cuarta*," p. 110, both in Vedia I). Gomara ("*Conquista*," etc., Vedia I, p. 392): "Vino Xihuacoa, gobernador y capitan general." Herrera (Dec. III, lib. II, cap. VII, p. 53) calls him "Guacoazin. Principal consejero del Rei, i su Lugar teniente." Torquemada (Lib. IV, cap. C, p. 567): "Salió un capitan, llamado Cihuacohuatl Tlacoatzin."

²¹⁶ Códice Ramírez (pp. 34 and 35): "Mira, Señor, que vienes á ser amparo y sombra y abrigo desta nacion Mexicana . . ." Joseph de Acosta (Lib. VII, cap. VIII, p. 408): Torquemada (Lib. II, cap. XIII, p. 95): "La causa de su Eleccion, fue, aver crecido en numero, y estar mui rodeados de Enemigos, que les hacian Guerra, y adigian."

²¹⁷ "*Tenure of Lands*" (pp. 405, 406 and 419). I beg leave to correct here a mistake of mine in note 75, p. 420. At the close of said note it reads: "The above quotations show conclusively that the soil of the "tecpan-talli" was held and vested in the King

ents, constituted the tribal stores; finally he commanded the people when in arms. The overthrow of the tribes of Azcapotzalco and Cuyuacan, by rendering these pueblos tributary, and compulsory allies of the Mexicans in warfare, suddenly increased these duties to such an extent that an assistant or colleague, a second head-chief, became necessary. Finally, when the confederacy came into existence, the first of these two chiefs was made its military commander, thus burthening him with duties of an extra-tribal nature.²¹⁷ He, therefore, had to relinquish a corresponding share of tribal business, which naturally fell to his associate. This associate, as we have already stated, was the "snake-woman" or "Cihuacohuatl," the proper head-chief of the Mexicans.

As daily leader of the council's "talk," the foreman of its deliberations, the "snake-woman" appears in the light of a judge, even of a supreme judge. But while, on all important occasions, he was the spokesman²¹⁸ of the council, and the awards he declared and the sentences he pronounced, were final and admitted of no appeal, yet it was only so because they emanated from the council, and not because they were his own individual decrees. He remained always subject to the authority of that body, and, in a general way, he can be said to have superintended the execution

... "In place of it, "vested in the *Kin*" is the proper reading. The mistake is wholly and exclusively mine—a "slip of the pen," which I neglected to correct in time.

²¹⁷ The Tezcucan writers, represented by *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXII and XXXIV) claim the leadership for Tezcucan, but the facts disprove it. Compare also "Tenure of Lands" (pp. 416, 417 and 418).

²¹⁸ *Fragmento No. 1* ("Biblioteca Mexicana"—"Noticias relativas al Reinado de Motecuzuma Ilhuicamina," p. 124): "Juntos los principales Mexicanos, el Rey les dixo lo que el Rey de Tezcucan pedía, y todos dieron la mano á Tlacaélel, el cual respondió en nombre de todos á su Rey." *Durán* (Cap. XIV, p. 118): "Tlacaélel, que en todo era el primer voto y á quien se dava la mano en responder." (Cap. XV, p. 128): "Todos dieron la mano á Tlacaélel para que respondiese al rey." (Cap. XXIX, p. 240): "Tlacaélel, poniéndose en pié, dixo desta manera, etc., etc." (Cap. XXXII, pp. 254 and 255, Cap. LIII, p. 417.) *Tezozomoc* (Cap. XVIII, p. 28, Cap. XIX, p. 30): "Y así oydo esto por los principales Mexicanos tomó la mano de hablar Cihuacoatl Tlacaéleltzin y dijo: hijo y nuestro muy querido rey, os encargo que veáis muy bien lo que quereis hacer . . ." (Cap. XXI, p. 32): "Pasados algunos dias dijo el rey Motecuzuma á Zihuacoatl Tlacaéleltzin general y oydor . . ." "Llegados todos los señores de los dichos pueblos al palacio del rey Motecuzuma, y sentados cada señor segun su merecimiento y valor de sus personas, digeron el rey Motecuzuma, y su presidente y capitan general Zihuacoatl Tlacaéleltzin." (Cap. XXXI, p. 48). (Cap. XXXVI, p. 57): "que el primero era su real consergero Zihuacoatl Tlacaéleltzin, . . ." (Cap. XXXIX, p. 62, Cap. XLIII, p. 80): "Luego en el palacio del rey Axaynca sin salir los grandes, ni nadie, prosiguió Zihuacoatl Tlacaéleltzin . . ." Further quotations are superfluous, particularly from this author.

of its judicial decisions, although, as will be seen hereafter, this part of the duty was properly assigned to other officers.

The "Cihuacohuatl" was responsible to the council for the careful housing of the tribute received, as far as it was applied to tribal requirements, and for the faithful distribution of the remainder²¹⁹ among the kins. This, and the fact that he kept the paintings recording the tribute, has caused Bernal Díez de Castillo to call him "mayordomo mayor," or general Intendant, and "keeper of the tribute" as we have already mentioned.²²⁰

How the "snake-woman" was the actual associate and colleague of that other chieftain who, after having been originally principal war-chief of the Mexicans, became at last commander of the confederate forces, we have already noticed.²²¹ We shall yet recur

²¹⁹This results from the authority exercised by the Zihuacatl over the captives in war. I have already alluded to this feature, and now, but recapitulate the following quotations: *Durán* (Cap. XIX, pp. 172 and 173). Also *Tezozomoc* (Cap. XXIX, p. 45, Cap. XL, pp. 64 and 65, Cap. LXII, p. 104, Cap. LXVI, pp. 110, 111, Cap. LXX, p. 119), etc., etc.

²²⁰*Bernal Díez de Castillo* (Cap. XCI, p. 87, Vedia II): "Acuérdome que era en aquel tiempo su mayordomo mayor un gran cacique que le pusimos por nombre Tapia, y tenía cuenta de todas las rentas que le traían al Montezuma, con sus libros hechos de su papel, que se dice amatl, y tenía destos libros una gran casa dellos."

²²¹There is no doubt in regard to the *equality of rank*, though the duties were somewhat different. "*Codice Ramírez*," (p. 68): "Concluidas las obsequias, el capitán general Tlacaelel que todavía era vivo, juntó los del consejo supremo Estos juntos . . . trataron de elegir nuevo Rey, y todos se encaminaban al valeroso Tlacaelel, el qual como otras veces, nunca quizo admitir el Reyno, dando por razon que más útil era á la Republica que hubiese Rey y coadjutor que le ayudasse como era él, y no solo el Rey Pero no por esto dejaba de tener tanta y mas autoridad que el mismo Rey, porque le respetaban y honraban, servian y tributaban como á Rey, y con mas temor, porque no se hazia en todo el Reyno mas que lo que él mandaba. Y así usaba tiara y insignias de Rey, saliendo con ellas todas las vezes que el mismo Rey las sacaba." (P. 67), when the old Zihuacatl died, his successor was elected: "con todas las preeminencias que su padre tenía." The "*Fragmento No. 1*" ("*Noticias relativas al Reinado de Motecuzuma Ilhuicamina*") is very positive also, almost always mentioning both officers together. *Durán* (Cap. XXVI, p. 215): "Ordenóse que solo el rey y su coadjutor Tlacaelel pudiese traer çapatos en la casa Real y que ningún grande entrase calçado en palacio, so pena de la vida, y solo ellos pudiesen traer çapatos por la ciudad, y ningún otro" (Cap. XXXII, p. 255): "Tlacaelel respondió: qué mas honra puedo yo tener que la que hasta aquí é tenido? qué mas señorio puedo tener del que tengo y é tenido? pues ninguna cosa los reyes pasados an hecho sin mi parecer y consejo en todos los negocios civiles y criminales" (Cap. LXI, p. 328), the speech of Tlacaelel there reported is rather too lengthy to copy. Its substance is contained in the closing words: "luego rey soy y por tal me auela tenido; pues qué mas rey quereis que sea? y así como así tengo de tener el mismo oficio y exercicio, hasta que me muera Sosegaos, hijos míos, y haced mi voluntad, que ya yo soy rey, y rey me será hasta que muera; . . ." (Cap. XLIV, p. 357): "el viejo Tlacaelel, á la mesma manera, al qual, dice esta ystoria, respetaban como á rey;" (Cap. XLVIII, p. 381): "el nombre de Cihuacatl, que el padre tenía, el qual era ditado de mucha grandeza heredado de los dioses; y así desde aquel día le llamaban Tlilpotonqui Cihuacatl, que era sobre nombre diuino." *Tezozomoc* ("*Cronica*," Cap.

to the relative positions occupied by both officers, and merely advert, here, to the fact, that, since the latter has commonly been called a monarch, the designations of "coadjutor to the King," "second-King," previously quoted, are explained, though not justified. The same explanation applies to the title of "vico-roy," or "royal lieutenant."

Finally, the "Cihuacohuatl" was ex-officio commander-in-chief of the Mexicans proper, whenever his colleague directed the entire confederate force.²²² If, however, this was not the case, then the

XXXIII. p. 53): "De la manera que fué vestido y adornado Moctezuma, lo fueron tambien Zihuacatl y Tlacaeltzin;" (Cap. XXXVI. p. 58): "pues solos dos eran los que havian de tener caltes, que eran Moctezuma, Zihuacatl y Tlacaeltzin, como segunda persona del rey, porque se entendiése havian de ser temidos de todos los grandes del imperio;" (Cap. XL, p. 68). Speech of Tlacaeltzin: "tocante á lo que tratais del señorio, yo siempre lo he tenido y tengo, . . . porque yo como segunda persona que siempre fui del rey y de los reyes pasados, etc." Further quotations from this author would become too numerous, consequently too bulky. Besides these sources, to which should be added *Joseph de Acosta* ("Hist. nat. y moral," Lib. VII, cap. XVII. p. 484, Cap. XVIII, p. 485), we find significant testimony in two authors who certainly did not gather their information at the source, from which the above series of authors obtained theirs. I refer to *Juan de Torquemada* ("Monarchia Indiana," Lib. XI, cap. XXV, p. 352): "Aqui parece lo mismo, que reservando el Rei Mexicano para si, la autoridad Real, le hace su igual en la Judicatura." *Velancurt* ("Teatro Mexicano," Parte IIa, Tratado II, cap. I, p. 369): "Tan absoluta era la autoridad que le daba, que reservando el rey en si la autoridad real, era en la judicatura igual." In regard to the fact that both chiefs wore the same characteristic ornaments and dress, see *Durán* (Lámina 8a to Cap. XXIII of Trat. I), also "*Codex Telleriano-Remensis*," comparing it with the head-dress of the leading figure of the sculptures on the rim of the cylinder known as the "stone of sacrifice," in the Museo Nacional of Mexico.

²²² "*Codice Ramírez*" (pp. 59, 60, 61, 62 and 63), treating of the "capitan-general Tlacaeltzin:" haciendo hazañas dignas de gran memoria por medio de su general Tlacaeltzin." The war against Chalco was waged by the Mexicans and their confederates, therefore we read (p. 4): "Y así fué que acudiendo esto Rey en personas á la guerra." (P. 67) his office was: "de capitan-general y segundo de su corte. . . *Durán* (Cap. XVII, pp. 147 and 148), war against Chalco, when both chiefs went along. (Cap. XVIII, p. 158), foray against Tepeaca, both chieftains in the field, as both Mexicans and confederates participated. (Cap. XIX), against the Huasteca. (Cap. XXII, p. 189): "Tlacaeltzin, principe de la milicia," in the raid against Coaxtlahuacan. In place of Tlacaeltzin, "era ya viejo y que no podria ya ir á guerra tan apartada," Cuauhnochtli commanded the Mexicans. The most explicit and positive author of all is *Tezozomoc* ("Crónica Mexicana," Cap. XIX, p. 32, Cap. XXI, p. 32): "Zihuacatl Tlacaeltzin general y oydor."—"y su presidente y capitan-general Zihuacatl Tlacaeltzin." In regard to the protracted hostilities against the tribe of Chalco, it is stated that the "Cihuacohuatl" alone commanded (Cap. XXII, p. 34); but it follows from p. 35, that after the first bloody though indecisive fight, the allies were called upon for assistance, although Tezozomoc says it was only a delegation to insure their quiet. This explains the contradiction between him and the two preceding authors. In (Cap. XXIV, p. 37), he acknowledges that Montezuma Ilhuicamina went along, together with Cihuacohuatl. The fact, that the conquest of Chalco was made by the Mexicans, with the assistance of allies, is conceded by other authors. See *Torquemada* (Lib. II, cap. XLIV and L). *Ortega* ("Apéndice" to Veytia, Cap. III, pp. 240-243). Therefore the Cihuacohuatl commanded the Mexicans. In the foray against Tepeaca and Tecamachalco, the confederate forces sallied out, (Cap. XVII): "cada uno con su capitan y

latter led the Mexicans in person, or a substitute for either of them might take the command.²²³ During the last days of aboriginal Mexico, when warriors from different tribes, together with the head-chiefs of Tezcuco and of Tlacopan, crowded into the invested pueblo, the so-called "King of Mexico" appeared as the *confederate* commander, while the "snake-woman" only wielded the authority and performed the duties of "captain-general" of the *Mexican* contingent.²²⁴

All these different attributes may be united in the functions of one office, namely: that of head-chief of the tribe. As such, we must consider the "Cihuacohuatl," and as such was he recognized by Cortés when in 1521, he created the last "snake-woman" "governor" of the remnants of the Mexican tribe and of the so-called Indian wards within which they "were" subsequently settled.²²⁵

We have seen that the "snake-woman" was the colleague, or associate in matters of tribal importance, of another officer, who had originally filled his place, but whose sphere of action had been so much extended through the formation of the confederacy, that a colleague became needed in tribal affairs. This officer, commonly entitled "King of Mexico," sometimes even "Emperor of Anahuac," was the "chief of men," "Tlaca-tecuhtli",²²⁶

capitanes señalados," and both war-chiefs of Mexico were present and in the field (p. 41). Not to increase the volume of quotations beyond measure, I shall simply add that, as the Cihuacohuatl grew older and could not well go to war, other captains took his place. These captains I will refer to hereafter. *Acosta* (Lib. VII, cap. XVIII).

²²³ Evidence to that effect is found in *Durán* (Cap. XXII, p. 189), and especially in *Tezozomoc* (Cap. XLVIII, p. 78): "Cuauhnochtli, capitán general." (Cap. LXXI, LXXII and XCI, pp. 160 and 161, etc., etc.). This explains why the title of chief-commander of the Mexicans is so variously stated. See the very sensible remarks of *Clavigero* (Lib. VII, cap. XXI, p. 494, etc.). These chiefs were, in this instance, temporarily appointed, since it was not the creation of an office, but simply a delegation of power for a certain special purpose. When the foray was over, the charge ceased to exist, the war-chief returning to his original rank.

²²⁴ *Cortés* ("Carta Tercera," *Vedia* I, p. 89): E dende a poco volvió con ellos uno de los mas principales de todos aquellos que se llamaba Ciguacoacín, y era el capitán y gobernador de todos ellos, é por su consejo se seguían todas las cosas de guerra." This fact is generally accepted, and needs no further proof.

²²⁵ *Cortés* ("Carta Cuarta," *Vedia* I, p. 110). *Petition to Charles V, by four Indian chiefs of Mexico*, June 18, 1532, in "*Cruautés horribles des Conquistants espagnols*," of Mr. Ternaux-Compans, 1st Series (Appendix, pp. 285, 286 and 299): "Moi, don Hernando de Tapia, Je suis feu de Tapia, et ancien Tucotecle, gouverneur de Mexico, sous le marquis del Valle." *Herrera* (Dec. III, lib. IV, cap. VIII, pp. 122 and 123). *Bernal Díaz de Cástillo* (Cap. CLVII, *Vedia* II, pp. 196 and 199). *Icazbalceta in Cerrantes-Salazar* ("Tres Diálogos," *Introd.* to 2d Dialogue, pp. 75 and 76).

²²⁶ I have used this title, perhaps for the first time among recent writers, in "*Art of War*," (p. 123). *Tezozomoc* (Cap. LXXXIII, p. 145). *Ramírez de Fuenkal* ("Letter,

In the year 1375, according to the Mendoza Codex, the first incumbent of this office was elected by popular vote.²²⁷ From that time on, the office remained strictly elective and non-hereditary, in so far as, like the chief officers of the calpulli, the descendants of the former incumbent were preferred to succeed him; provided they were undoubtedly competent.²²⁸ But no rule of succession

etc." in *1st Recueil* of Ternaux-Compans, p. 247). *Codex Mendoza* (Plate XVIII): "Tlacatectli gobernador" also the "Declaracion de la figura." *Sahagun* (Lib. VI, cap. XX, pp. 135 und 138). This very remarkable chapter deserves to be closely studied, since it embodies the principles upon which the aborigines of Mexico filled their offices, and the bases of their mode of government. It would be too long to attempt a full analysis of it, and anything short of a careful study would fail to give an adequate conception of its importance. I merely refer to the statements of the celebrated Franciscan in regard to the title under consideration: "porque ya está en la dignidad y estrado, y tiene ya el principal lugar donde le puso nuestro señor? ya le llaman por estos nombres tecatlatlo, tlacatecutli, por estos nombres le nombran todos los populares . . ." This passage and the succeeding one: "y alguno de estos tomado de la república por rey y señor," clearly indicate that the title is that of the so-called "King" or "chief of men;" (p. 138); however, he mentions the "tlacatecutli" as one of "dos senadores para lo que toca al regimiento del pueblo." There is an evident contradiction here, which is very similar to the one already noticed in regard to the two sections of the council, in a former note.

²²⁷ *Codex Mendoza* (Plate II). *Mendieta* (Lib. II, cap. XXXIV, p. 148). In regard to this Chronology, compare the late and highly valuable work of *Don M. Orozco y Berra*, ("Ojeada sobre la Cronologia Mexicana" in the "*Biblioteca Mexicana*,"—an Introduction to a reprint of Tezozomoc). The learned author has brought to light many highly valuable facts. That "Acamapichtli" or "Hundred of Reeds" was elected, is abundantly proven by many authorities, so that detailed quotations are useless.

²²⁸ The fullest report is contained in *Sahagun* (Lib. VIII, cap. XXX, p. 318): "Quando moria el señor ó rey para elegir otro, juntábanse los senadores que llamaban tecutlatloque, y tambien los viejos del pueblo que llamaban achcacahtli, y tambien los capitanes soldados viejos de la guerra que llamaban Ianequiaoques (should be Iau-Tequiaoques), y otros capitanes que eran principales en las cosas de la guerra, y tambien los Sátrapas que llamaban Tlenanacazques ó papaoque: todos estos se juntaban en las casas reales, y allí deliberaban y determinaban quien habia de ser señor, y escogian uno de los mas nobles de la línea de los señores antepasados, que fuese hombre valiente y ejercitado en las cosas de guerra, osado, animoso, y que no supiese beber vino: que fuese prudente y sábio, y que fuese criado en el Calmécac: que supiese bien hablar, y fuese entendido, recatado y animoso, y quando todos ó los mas concurrían en uno, luego le nombraban por señor. No se hacia esta eleccion por escrutinio ó por votos, sino todos juntos confiriendo los unos con los otros, venían á concertarse en uno." To this should be added the testimony of the same author (Lib. VI, cap. XX, pp. 136-139). *Durán* (Cap. XI, p. 103): "y es de saber que no ponian hijo del que elexian por rey, ó del que moria, porque como ya tengo dicho, nunca heredaron los hijos, por vía de herencia, los ditados ni los señorios, sino por election; y así, agora fuese hijo, agora fuese hermano, agora primo, como fuese eleito por el rey y por los de su consejo para aquel ditado, le era dado, bastaba ser de aquella llinia y pariente cercano; y así iban siempre los hijos y los hermanos herediándolo, poco á poco, si no esta vez, la otra, ó si no la otra, y así nunca ania de aquella generacion aquel ditado y señorio, eligiéndolos poco á poco." (Cap. LXIV, p. 498): "por que en aquel tiempo heredábanse los hermanos hijos del rey unos á otros, aunque de lo que desta hystoria es notado, ni ania herencia ni sucesion, sino solos aquellos que los electores escogian, como fuese hijo ó hermano del que moria, ó sobrino ó primo, en segundo grado, y este orden me parece que llevan en todas sus electiones, y así cree que muchos de los que claman y piden venillas por herencia los señores, porque en su infidelidad sus padres fueron reyes y señores,

limited the choice to a family, perhaps not even to a kin.²²⁹ Like every other office it had to be *deserved*,²³⁰ and could not be obtained by birth or through craft;²³¹ neither could it be transmitted through inheritance.²³²

The history of this office may be divided into two periods: the first, closing with the formation of the confederacy in the first quarter of the fifteenth century; the second, beginning at that time, and lasting until the final abrogation of the office by the Spaniards, in 1521.²³³ During the former period the "chief of men" was, as we have already said, but the executive chieftain

entiendo no piden justicia, porque en su ley antigua mas eran elecciones, en todo género de señores, que no herencias ni sucesiones." The author of the above was a native Mexican, and knew the customs of his people. "*Códice Ramírez*" (p. 58): "porque como queda referido, nunca heredaron los hijos de los Reyes en los señoríos, sino por elección daban el Reyno á uno destos quatro príncipes, á los quales tampoco heredaban sus hijos en estos ditados y cargos; sino que muerto uno escogían otro en su lugar al que les parescía, y con este modo siempre tuvo este Reyno muy suficientes hombres en sus Repúblicas, porque elegían los mas valerosos." *Tezozomoc* (Cap. LXXXII, pp. 142 and 143), confirming the mode of election as reported by Sahagun. *Zurita* ("Rapport, etc.," p. 14): "Ainsi, ils préférèrent laisser après eux un successeur qui fut capable de bien gouverner, plutôt que d'abandonner cette charge à leurs fils, à leurs petits-fils ou à leurs lieutenants, comme le fit Alexandre le Grand." *Mendieta* (Lib. II, cap. XXXVII, pp. 153 and 154). *Torquemada* (Lib. XI, cap. XXVII, p. 358): "Confieso de la Republica Mexicana esta manera de sucesion, y que se elegian algunas veces, sin diferencias, notando solamente las qualidades de las personas, y de estos fue Itzcohuatl, valeroso Rei Mexicano, que por el valor de su persona, y la grandey de su animo, no se advirtió, ni reparó para eligirle, en que era Hijo de una Esclava; pero no es maravilla, que el bien publico, prefiera al particular." I forbear quoting the tales about the election of sundry Mexican chiefs, as related by the above and other authors.

²²⁹ *Clarigero* (Lib. VII, cap. VI, p. 463), has distinctly formulated the idea: "that the crown should always remain in the house of Acamapitzli." Enough has been said about the Mexican family to dispel the notions of an "Indian dynasty" in Mexico. At best, a succession or perpetuation of the office in a certain *kin* or *calpulli*, might be conceded. *Durán* (Cap. XI, p. 103), *Códice Ramírez*, (p. 58), and *Zurita* (p. 14), make even this somewhat doubtful; so does the election of Itzcohuatl, as conceived by *Torquemada* (Lib. XI, cap. XXVII, p. 358). The origin of "Flinty Snake" is, however, reported in too many different ways to justify any conclusion based on it. The fact, that one of the four leading war-captains should become "chief of men," militates against descent of office in a certain kin. See also *Joseph de Acosta* ("Hist. nat. y moral de los Indias," Lib. VI, cap. 24, pp. 439 and 440).

²³⁰ *Sahagun* (Lib. VI, cap. XX; Lib. VIII, cap. XXX). *Acosta* (Lib. VI, cap. 24).

²³¹ *Las Casas* ("Hist. apologética" quoted on p. 124 of Vol. VIII of Lord Kingsborough's collection): "Quando algun señor moria y dexava muchos hijos, si alguno se alzava en palacio y se queria preferir á los otros, aunque fuese el mayor, no lo consentia el Señor á quien pertenecia la confirmacion, y menos el pueblo. Antes dexavan pasar un año, ó mas de otro, en el qual consideravan bien qual era mejor para regir ó gobernar el estado, y aquel permaneció por señor." *Zurita* ("Rapport, etc.," pp. 18 and 19). *Torquemada* (Lib. XI, cap. XXVII, pp. 358 and 359). Further quotations would be useless.

²³² In addition to the authorities named in note 228, I refer to *Clarigero* (Lib. VII, cap. VI, p. 463), with the restriction mentioned in note 229. "*De l'ordre de Succession, etc.*" (*1st Recueil of Ternaucz-Compans*, p. 228).

²³³ *Zurita* ("Rapport, etc.," p. 69). *Sahagun* (Lib. VIII, cap. I, p. 272). The death of Cuauhtemotzin put an end to the office in the eyes of the Spaniards, although it had

of the tribe, and the duties of his office, at that time embracing those of the "Cihuacohuatl," have been stated by us already. The confederation had so far wrought a change that he became "general" of its allied warriors,²³⁴ and consequently to a certain extent, an extra-tribal officer residing at Tenuchtitlan, Mexico, because the military supremacy was vested in that tribe. We have previously alluded to the fact that it was the "chief of men" upon whom we have been heretofore accustomed to look as a monarch, even a despot. His office and its attributes have been the mainstays of the notion that a high degree of civilization prevailed in aboriginal Mexico, in so far as its people were ruled after the manner of eastern despotisms.

Not only was this pretended monarch strictly elective, but he could also be deposed for misdemeanor.²³⁵ "Wrathful chief" the younger, better known as the last Montezuma, was removed from office and his successor elected before that ill-starred chieftain's violent death.²³⁶

been formally abrogated by the capture of that chieftain, to whom no successor was appointed by the whites.

²³⁴ "Tenure of Lands" (p. 417). *Ixtlilxochitl* ("Histoire des Chichimèques," Cap. XXXII, p. 219), claims for his Texcoco chief the military command. In the shape of an "imperial" title: "He of Texcoco was greeted by the title of Acuilhua Tecuhtli, as also by that of Chichimecatl-Tecuhtli which his ancestors carried, and which was the distinctive mark of the empire." I believe this claim was disposed of in "Tenure of Lands" (p. 394, notes 9 and 10). See also *Vetancurt* (Part II, Trat. I, cap. XIV, p. 291): "y remataron la fiesta quedando Izcohuatl por rey supremo del imperio tepaueca, por ser primero que Netzahualcoyotl." See also the tacit acknowledgments by *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXVIII, LXXIV, LXXV).

²³⁵ *Vetancurt* ("Teatro Mexicano," Parte II, Trat. II, cap. XV, p. 485): "Otras muchas leyes extravagantes que con el instinto natural, con maduro consejo confirmaron y que inviolablemente guardaban, tenían los Mexicanos y los de Guatemala, como el de deponer al rey con junta y consejo de la nobleza."

²³⁶ That "wrathful chief" had lost all his authority during the time Cortés went against Narvaez, is clearly stated in "Carta Segunda" (Veilla I, pp. 41 and 42) already, though the fact of his removal from office is not noticed by the Spanish commander himself. It is, however, mentioned by *Bernal Díez de Castillo* (Cap. CXXVI, p. 132). Montezuma said to Olid and to the "Padre de la Merced": "Yo tengo creído que no aprovecharé cosa ninguna para que cese la guerra, porque ya tienen alzado otro señor . . . ;" and again the Mexicans themselves are reported as answering to Montezuma: "Hacémosos saber que ya hemos levantado á un vuestro primo por señor." *Las Casas* ("Brevisísima Relación," p. 49), Alvarado: "Ponen un puñal á los pechos al preso Motencuma que se pudiese á los corredores, y mandábase que los Yndios no combatesen la casa, si no que se pudiesen en paz. Ellos no curaron entonces de obedecelle en nada; antes platicaban de elegir otro Señor, y capitan, que guiasse sus batallas." *Sahagún* (Lib. XII, cap. XXI, pp. 28 and 29): "Oídas estas voces por los Mexicanos y Tlatilulcas, comenzaron entre sí á bravear, y maldecir á Moctezuma diciendo que dice el puto de Moctezuma y tú bellaco con él? no cesaremos de la guerra; luego comenzaron á dar alaridos y á tirar saetas y dardos ácia donde estaba el que hablaba junto con Moctheucuzuma." This was before Cortés had even captured Narvaez, and shows that at that time the "chief of men" had already lost all authority. *Códice Ramírez* (p. 89). When the other chief who was with Montezuma had spoken:

Among the duties of the "chief of men," we notice first that of residence at the "tecpan" or official house.²³⁷ This is commonly stated to be a royal privilege, whereas it was, in fact, a burthen, as it simply meant that he occupied the position of head of the official household of the tribe.²³⁸ The formation of this household we have elsewhere described.²³⁹ It was a communal group, consisting of the head-war-chief and his family, together with such assistants (and their families, if any), as were required for the transaction of daily business.²⁴⁰ The "tecpan" is appropriately called: "house of the community," "casa de comunidad," by Fray Juan de Torquemada,²⁴¹ and its residents were placed and kept there for the purpose of extending tribal hospitality, and for the furtherance of tribal business and extra-tribal relations. This "official family" had to wait upon the officers and chiefs who

"un animoso capitan llamado Quauhtemoc de edad de diez y ocho años que ya le querian elegir por Rey dijo en alta voz:" "Qué es lo que dize este bellaco de Motecucuzuma, muger de los españoles, que tal se puede llamar, pues con ánimo mugeril se entregó á ellos de puro miedo y asegurándonos nos ha puesto todos en este trabajo? No le queremos obedecer porque ya no es nuestro Rey, y como á vil hombre le hemos de dar el castigo y pago." *Fragmento No. 2 (Noticias Relativas á la Conquista,* etc., p. 143): "y ellos le deshonraron y llamaron el Cobardle." *Torquemada* (Lib. IV, cap. LXVIII, p. 494): "sólo á un Hermano de Motecuhzuma, Señor de Iztapalapan, y los Mexicanos, ni hicieron el Mercado, ni le dexaron bolver á la Prision, y le eligieron por su Caudillo" (Id. Cap. LXX, p. 497). *Vetancurt* ("Teatro," Parte IIIa, Trat. I, cap. XIV, p. 125, cap. XV, pp. 130, 131). *Herrera* (Dec. II, lib. X, cap. VIII, p. 264). It is very interesting to notice that Torquemada and Herrera use identically the same words. Their versions are the fullest.

²³⁷ *Tenure of Lands* (pp. 409 and 410). *Durán* (Cap. XXVI, p. 214): "Y así lo primero que se ordenó, fué que los reyes nunca saliesen en público, etc., etc." It is scarcely necessary to prove this at any length, by quotations.

²³⁸ *Tenure of Lands* (p. 409). *Herrera* (Dec. III, lib. IV, cap. XVII, p. 138): "Estos Tributos eran para el bien publico, para las Guerras, para pagar á los Gobernadores, á Ministros de Justicia, á Capitanes, porque toda esta Gente comia, de ordinario, en el Palacio del Rey, adonde cada uno tenia su asiento, y lugar conocido, segun su oficio, y Calidad, . . ." *Sahagun* (Lib. VIII, cap. XIII, p. 301): "Y despues que habia comido el señor, mandaba á sus pages, ó servidores, que diesen de comer á todos los señores y embajadores que habian venido de algunos pueblos, y tambien daban de comer á los que guardaban el palacio. Tambien daban de comer á los que criaban los mancebos que se llaman telpuchtlatos y á los Sátrapas de los idolos. Asimismo daban de comer á los cantores, á los pages, á todos los del palacio, etc., etc. . . ." *Texozomoc* (Cap. LXXXII, p. 114). The latter is very positive, mentioning it as a duty.

²³⁹ *Tenure of Lands* (pp. 409 and 410).

²⁴⁰ The information on this point goes back to *Cortés* ("Carta Segunda," Veda I, p. 35): "La manera de su servicio era que todos los dias luego en amaneciendo eran en su casa de seiscientos señores y personas personales, los cuantos se sentaban, y otros andaban por unas salas y corredores que habian en la dicha casa, etc., etc." The other eye-witnesses are hardly as positive. The exaggerated reports of *Ordoño* (Lib. XXXIII, cap. XLVI, p. 505). *Torquemada* (Lib. III, cap. XXV, p. 296), *Vetancurt* ("Teatro," Parte IIa, Trat. I, cap. XXIII, pp. 356, 357, etc.), *Herrera* (Dec. II, lib. VII, cap. IX, pp. 183, 184) and others, simply prove that the "tecpan" was permanently occupied by a numerous household, of which the "chief of men" was the head.

²⁴¹ *Monarquía Indígena* (Lib. VI, cap. XXIV, p. 48).

daily transacted affairs at the "tecpan," to carry their victuals to the halls in which their sessions were held and also to wait upon the foreign official guests (often enemies) who were received in separate, even secluded, quarters.²⁴² But their main duty con-

²⁴² *Sahagun* (Lib. VIII, cap. XIII, p. 301, as copied in note 238). *Zurita* ("Rapport," etc., p. 96): "Il y avait dans les palais des souverains des appartements vastes, élevés de sept à huit marches comme nos entre-sol, et destinés à la résidence des Juges." (P. 100): "De bonne heure on apportait au palais même les repas des magistrats." This would imply that the food was brought to the "tecpan" from the places where the members of the council ("tecutlatoca") actually resided. This is positively contradicted by *Tezozomoc* ("Crónica," Cap. LXXXII, p. 144), who makes it one of the duties of the "chief of men," "con los viejos y viejas mucho amor, dándoles para el sustento humano: regalados los principales, teniéndolos en mucho, y dándoles la honra que merecen: llamarles cada día al palacio que comán con vos, ganándoles las voluntades, que con ellos está el sostener el imperio, buenos consejeros, buenos amigos, que por ellos os es dado el asiento, silla, estrados, honra, señorío, mando y ser." Such an extensive meal of the tribal officers is also intimated by the same author as having been customary with the Xochimilcas, — a tribe well known as being closely allied to the Mexicans, — where he says (Cap. XVI, pp. 25 and 26): "Las Indias mugeres de las Xochimilcas, lavando muy bien el itzcacuiltl, tecutlatl, y otras cosas salidas de la laguna, y lavado, y limpiamente lleuándolo al palacio de Tecpan para que le comiesen los principales, y comenzándolo a comer estava muy sabrosa, y prosiguiendo en su comida, etc., etc. . . ." *Zurita* ("Rapport," etc., p. 48), speaking of certain chiefs, says: "Outre ces avantages, le souverain suprême payait une solde à ces chefs, et leur faisait délivrer des rations. Ceux ci se tenaient continuellement dans son palais pour former sa cour." It is to these "chiefs," which were none other than the members of the council, that *Gomara* (Vedia I, p. 342) refers, copying *Cortés* ("Carta Segunda," Vedia I, p. 35), who adds, however: "E al tiempo que traian de comer al dicho Mutezcuma, asimismo lo truan a todos aquellos señores tan cumplidamente quanto a su persona, y tambien a los servidores y gentes de estos les daban sus raciones. Habia cotidianamente la dispensa y botilleria abierta para todos aquellos que quiesesen comer y beber." The chaplain has added to Cortés' relation some items tending to increase or enhance the importance of the meals, whereas he has suppressed the above, very important, passage. Compare Vedia: (Tom I, p. 345). His statements agree far better with those of *Bernal Díaz* ("Hist. verd." Vedia II, cap. XCI, pp. 86 and 87). The fact of the "official household" being entrusted with the dispensation of tribal hospitality is therefore certain. The members of the council ate there also, as proven by *Zurita* (p. 96), *Sahagun* (Lib. VIII, cap. XIII, p. 301), *Mendieta* (Lib. II, cap. XXVIII, p. 134): "traíanles algo temprano la comida de palacio," and it is implied by *Torquemada* (Lib. XI, cap. XXV, p. 332): "Estos Jueces oían de ordinario, en especial de causas criminales, todos los días a mañana, y tarde, . . . asistían en sus Salas, que las havia en la casa del Rei, particulares, . . ." He is even very positive (Lib. III, cap. XXV, p. 296): "No solo tenia este Grande, y Magnifico Emperador casas muy cumplidas, y Salas, y Aposentos grandiosas, para su Morada, para sus Consejos, y Señores, y toda la demas Gente, que llegaba a ser digna de su hospedage, y recibimiento, donde como su misma Persona Real eran servidos, y acariciados . . ." also (Lib. IV, cap. L, p. 459). He also says of "Fasting Wolf," headchief of Tezcucoc (Lib. II, cap. LIII, p. 167): "no fué menos en el gasto de su Casa, así para su Persona, como para hacer Hospicio ordinario a todos los que servían en su Palacio, y otros muchos Señores, que comían en su Casa, cada día, . . ." *Petrus Martyr of Anghiera* ("De nouo Orbe," etc., Dec. III, cap. X, pp. 231 and 232). *Clarigero* (Lib. VII, cap. XVI, p. 482), about Tezcucoc. In regard to Mexico he is very positive (Lib. V, cap. III, p. 304). Further quotations are useless. I shall merely refer to the "Codex Mendoza" (plate LXX) and, for the sake of analogy with the tribes of Quiché-stock in Guatemala, to the "Popol Vuh" (p. 305): "Are qui cuxbal quib ri-oxib chi nim-ha u bi cacmal, chiri cut chi c'uqah-vi c'uqulya, . . ."

sisted in preparing and serving every day an extensive meal, of which not only all the members of the household, several hundreds in number, partook, but every one who, either on business or as an idler, happened to be on or about the premises.²⁴³ It was the duty of the "chief of men" himself to open this rude clannish feast,²⁴⁴ and it pertained to his office to represent the hospitality and dignity of the tribe on such occasions. Hence the peculiar

That the delegates from foreign tribes were quartered at the "tecpan" is plainly stated by *Sahagun* (Lib. VIII, cap. XIX, p. 308): "Habla otra sola que se llamaba Coacalli: en este lugar se aposentaban todos los señores forasteros, que eran amigos ó enemigos del señor. . . ."; "*Codice Ramírez*" (p. 75): "Vinieron á estas fiestas hasta los propios enemigos de los Mexicanos, como eran los de Michhuacan y los de la provincia de Tlaxcala, á los quales hizo aposentar el Rey y tratar como á su misma persona, y hazerles tan ricos miradores desde donde viesen las fiestas, como los suyos;" *Durán* (Cap. XI, p. 317, cap. XLIII, p. 347): "Fasting child" of Texcoco "aposentándole en un lugar que ellos llaman Teccalli, que quiere decir, palacio Real." "Luego llegó el rey de Tacuba con todos sus principales y señores. . . . Á quien no menos honra y cortesia se hizo que al de Texcoco, poniéndole en el mismo palacio, junto á Nequauipilli." The delegates from Tlaxcallan, Huexotzínco, and Cholula were: "Llevados al palacio real, donde les tenían aparejado un retramiento oculto y escondido," and "fueron aposentados en el mismo lugar" those of Michhuacan and others (pp. 350 and 351), also (Cap. LII, pp. 428 and 429, and LVIII, p. 459, etc.). These authors are also fully confirmed by *Texozomoc* ("*Crónica*," Cap. LXIV, pp. 106 and 107; cap. LXVIII, p. 111; cap. LXXXVI, p. 151), *Ixtlilxochitl* ("*Histoire des Chichimèques*," Cap. XXXVI, p. 254, speaking of Texcoco), *Torquemada* (Lib. XIV, cap. I, pp. 534 and 535). The latter distinguishes between the "calpixca" and "el palacio," stating that delegates were quartered at the former. But since he himself (Lib. VI, cap. XXIV, p. 48) calls the "tecpan" casa del comun—a name given by him to the "calpixca"—and we know from *Sahagun* (Lib. VIII, cap. XIX, p. 307) that the "calpixcacalli" was a hall of the "tecpan," there can be no doubt as to the fact, that the "tecpan" was also the place where delegates were received, lodged and fed, at the expense of the tribe.

When, in 1537, the Bishop Las Casas sent certain traders with full instructions and "implements for conversion," to the Indians of "Tuzulutlan" or of the "Tierra de Guerra" *Fray Antonio de Remesal* ("*Historia de la Provincia de S. Vicente de Chyapa*," etc., etc., Lib. III, cap. XV, p. 135): Y como en aquel tiempo no aulla mesones ni casas de comunidad, todos los forasteros que llegauan al lugar acudian á pasar en casa del señor, que los recebia humanamente, hospedaua y daua de comer conforme la calidad de la persona, y el forastero reconocia el bien recibido, ó que aulla de recibir, poniendo á los pies del señor algun presente conforme á su posibilidad." The traders, therefore, "took lodgings" at the official house,—the tecpan,—and staid there (as we may read p. 136 of the Friar's history) until they had performed their work of opening the country to the preaching of the gospel. The comparison with Cortés, being also quartered at the "tecpan" of Mexico, is indeed striking.

²⁴³ Descriptions of this meal are so abundant, that it is hardly worth while to refer to them in detail. I would only call particular attention to the statements of *Cortés* ("*Carta Segunda*," Vedia I, p. 35), *Bernal diez de Castillo* ("*Hist. verdadera*," etc., etc., Cap. XCI, pp. 86 and 87, of Vedia II), *Andrés de Tápia* ("*Relacion sobre la Conquista de México*," Col. de Doc's II, p. 581). These statements, made by eye-witnesses, if viewed in their proper light and compared with those of subsequent writers, fully corroborate the views of *L. H. Morgan* ("*Montezuma's Dinner*" in *N. American Review*, 1876), that this meal was but an official communal one, given by the official household of the tribe, as part of its daily duties and obligations.

²⁴⁴ I cannot refrain here from recalling the description of the meal given to the Clan McIvor by its chief "Fergus McIvor, Vich Ian Vohr,"—so graphically pictured by Sir

earnestness of his manner which eye-witnesses have mistaken for the haughtiness of a tyrant.²⁴⁵

These duties not only necessitated official residence at the "official house," but even permanent stay there, unless important business required the chief's absence.²⁴⁶ Such absence, however, could only be justified by official duties, and then the "chief of men" had to appear with all the tokens and emblems of his rank.²⁴⁷ If otherwise, he might indeed, go about, but he lost all claim to official recognition.²⁴⁸ Hence the statements are true in the main, however exaggerated in detail, that great decorum was observed towards the "chief of men" whenever he appeared in public, that he was addressed with marked deference, and that a certain pomp surrounded him on such occasions.²⁴⁹ These occasions were, of course, opportunities for the display of Indian

Walter Scott in "Waverley." As to the part played by the "chief of men" see particularly *Bernal Díez* (Cap. XCI. p. 86, Vedia II).

²⁴⁵ This particularly earnest mien is noticed by all authors. It is strictly Indian, and found among the rudest tribes.

²⁴⁶ *Durán* (Cap. XXVI. p. 214): "Y así, lo primero que se ordenó, fué que los reyes nunca saliesen en público, sino á cosas muy necesarias y forçosas." *Codice Ramírez* (p. 76): "De ordinario estaba retirado saliendo muy pocas vezes á vista del pueblo."

²⁴⁷ *Durán* (Cap. XXVI. p. 214). *Sahagún* (Lib. VIII, cap. X. p. 291). It is distinctly asserted by the former that, what he has called "corona real" could only be worn by the "chief of men" and the "snake-woman." This head-dress, very appropriately termed by the Spaniards, "half mitre" ("media mitra") is figured by many authors of native origin. See *Codex Mendoza* (plates II to XIV, also LXX), *Durán* (Láminas 2 to 14, also 16, 18, to 24 etc.), *Codice Ramírez* (plates 4 and 5). It is called "Xihuitzollí" by the Mexicans. See also *Molina* (Parte Ia, p. 30 and IIa, p. 160) from "Xiuhtl" turquoise or green stone, and is totally different from the head-dress worn by the "chief of men" in the field. Compare "*Art of War*" (p. 126).

²⁴⁸ This explains the stories about the "Incognito" ramblings of "Fasting Wolf" of Tezcuco, so frequently repeated after the Ixtlilxochitla, as well as that of the arrest of "Wrathy Chief" (the last Montezuma) for appropriating corn out of a field. The latter tale is beautifully told by *H. H. Bancroft* (Vol. II, pp. 451, 452) after the best authorities.

²⁴⁹ No author has been more prolific in pictures of pomp, regal wealth and magnificence, than *Bernal Díez de Castillo* ("*Historia verdadera*," etc., etc., Cap. LXXXVIII, XCI and XCII, etc.). Most of the later writers have placed undue reliance on his statements, assuming that the truthfulness with which he "gave vent" to his own individual feelings and impressions, was the result of cool, impassionate observation. Anyone who has read attentively (and not merely glanced over at random for the purpose of obtaining quotations) his protracted "*Mémoires*," will become convinced that he is, in fact, one of the most unreliable eye-witnesses, as far as general principles are concerned. In every detail where his personal feelings are not involved or by which, even at the late date when he wrote, they were not involuntarily aroused, he is much more trustworthy than when he takes special pride or pains to be very explicit. Thus, it is curious to compare his description of "Wrathy Chief's" reception of Cortés with that given subsequently by the "Marquis del Valle" himself, ("*Carta Segunda*," Vedia I, p. 25). It was doubtlessly the greatest effort at pomp and display ever attempted by the Mexicans, since they went to meet and greet the most incom-

finery, when a number of articles were used to deck the "chief of men" as his official insignia, but the custom of speaking to

prehensible beings ever heard of by them. It is interesting to place both versions side by side. The translation is my own and I therefore beg for indulgence.

Cortés. Second Dispatch.

"At that place more than a thousand principal people came to greet and to speak to me, all citizens of the said city, and all dressed alike and according to their custom very richly, and when they came to speak to me, every one of them made, before coming up, a particular ceremony, customary among them, which consisted in each one of them putting his hand on the ground, kissing it; and in this manner I waited almost an hour until each one had made his ceremony." "..... After we had passed that bridge, this lord Mutezuma came to receive us with about two hundred Lords, all barefooted and dressed in other livery or manner of clothing, also very rich after their custom, and more so than that of the others. They came in two processions, closely hugging the walls of the street which is very broad, fine, and straight, so that from one end of it the other end may be seen, and two-thirds of a league ("legua") in length, with very good buildings on both sides, dwellings as well as temples. And the said Mutezuma went in the middle of the street with two chiefs, one to his right and the other to his left. One of these was the same one who, as I said, had come to speak to me in the litter, and the other was the said Mutezuma's brother, lord of that city of Iztapalapa which I had left that day. All three were dressed alike, except Mutezuma who wore soles to his feet, whereas the other two chiefs had none and supported him by his arms."

Bernal Diaz de Castillo. Cap. 88.

"When we reached the place where another pathway (dyke) branched off to Cuyoacan, many principals and caciques came, covered with very rich mantles, with ornaments and liveries, those of one cacique different from those of another, and the dykes were filled by them. These great caciques were sent by the great Montezuma ahead to receive us, and as they arrived before Cortés they bid us welcome, touching the ground and kissing it in token thereof." "Thus we were detained a good while, and from there the Cacamacan, chief of Texcoco, and the chief of Iztapalapa, and the chief of Tacuba and the chief of Cuyoacan went forward to meet the great Montezuma who approached in a rich litter, accompanied by other great Lords and caciques holding vassals. And when we neared Mexico, where there were other small towers, the great Montezuma descended from his litter, and these great caciques took hold of his arms, advancing with him under a marvellously rich canopy of green plumes with large golden ornaments, much silver, and pearls and stones of "Chalchihuitl" suspended from it as fringes, and very dazzling to the eye. The great Montezuma was very richly dressed after their custom, with ocatras on his feet (as they are called), with golden soles and much jewelry over them. The four lords who came with him were also richly dressed, though not in the same manner as when they had come out to receive us,—as if they changed dress on purpose under way. Besides these Lords, there came other great caciques who bore the canopy over their heads, and other many Lords preceded the great Montezuma sweeping the ground before him and placing ropes for him to step upon. None of these Lords ventured to look him in the face, but all had their eyes cast down, except those of his relatives and nephews who supported him by the arms.

him with downcast eyes was not so much a mark of particular respect, as a thoroughly Indian habit of shy suspicion, common

A third eye-witness, *Andrés de Tápia* ("Relacion," etc., Col. de Doc's, II, p. 579), simply says: "The said Mutezuma went in the middle of the street, and all the rest of the people were along the walls, close to them, as such is their custom."

The version of Bernal Díez is corroborated by *Oviedo* ("Hist. general," etc., Lib. XXXIII, cap. XLV, p. 500), from information derived by him of "some knights and soldiers who had taken part in the conquest of New Spain" (Title of Chapter XLV, p. 494). But the old chronicler does not give the names of his informants.

The same question recurs here, which we have already discussed in regard to the fights with the Tlaxcalteca ("Art of War," p. 153, note 203), and here again we reach the same conclusion namely: that Bernal Díez de Castillo, "bent upon recollecting personal incidents, and, from his subaltern position" less able to see closely, in this instance, magnifies the importance of the action beyond the limits of truth.

It is easily noticed, how much more sober, and therefore less pompous, are the statements of the Spanish commander and of his lieutenant, than those of the common soldiers, including *Oviedo's* anonymous informants. And it should be remembered that Cortés, who was the chief actor in the scene, certainly saw more of it and saw it far better than any of the others. Furthermore, at the time he wrote his report (the 30 of October, 1520, or only about one year after the date of the occurrence), Cortés had personal and political motives to magnify and embellish the picture. If his statements, therefore, fall far below those of his troopers in thrilling and highly colored details, there is every reason to believe that they are the more reliable and trustworthy.

Referring, therefore, to the description by Cortés, we find, on the whole, nothing but a barbarous display common to other Indian celebrations of a similar character. Of the Mexicans themselves, a number of such receptions are related by aboriginal authors. I particularly refer to *Tetzozomoc* ("Crónica," etc., Cap. XXVII, pp. 41 and 42). Upon the return of the Mexicans from their successful raid on Tecamachalco and Tepeaca: "the Mexicans were received in triumph, with horns, trumpets (?), flowers, and frankincense. The old men of the tribe, carrying censers and roses, stood in two rows on each side of the way, their hair tied on the back of their heads with strips of red leather, called cuauhtlalpiloni, with shields in their hands, rods—cuauhtpilli,—and rattles, in token of old age and of being fathers to such braves. Between them the Mexican troop had to pass,—and these are called cuacuacultzin,—taking in the middle the captains, and the prisoners which they had brought from the four pueblos;" also (Cap. XXIIX), though it is less explicit, about the return from the foray against the Huastecas; (Cap. XXXVIII p. 62), speaking of the return from the foray against Huaxaca: "Then Moctezuma commanded to all the old men and to the principal Mexicans to go out and receive the returning warriors with much mirth and joy. They met them in the road, and greeted them, incensing them with much copal, which is like unto myrrh, and a mark of great honor, token of triumph in war;" (Cap. XLIX, p. 79): "At Mazatzintamalco (which has since become garden of the Marquis del Valle), the old men, Cuauhqueque, and the Mexican council were arrayed in line to receive him, each one with his calabash-rattle, and armed with shields and macanas, wearing ichcahuipiles, and with the hair tied up on the back of the head with strips of red leather. Along the road there were, at intervals, bowers and huts decked with roses, and the old men joined the procession which moved into Mexico-Tenuchtilan, directly up to the temple of Huizilopochtli." This was when "Face in the Water" returned from the raid against the Matlatzincas;—(Cap. LII, p. 85) when the same "chief of men" returned, beaten and defeated by the Tarasca of Michhuacan, the same reception was made to him, only with groans, and wails of grief and mourning; also (Cap. LVIII, p. 95, Cap. LXII, p. 104, etc., etc.). It follows from the above that the reception of Cortés and whatever barbarous display attended it, was strictly according to established custom. Similar receptions were made to trading companies returning with particular success. *Sahagún* (Lib. IX, cap. II, p. 330). "They went in procession like two files, one of priests and the other of chiefs, and they met them in

even now to much ruder tribes;²⁵⁰ and the ornaments and peculiar garments, like the head-dress so very appropriately designated by the Spaniards as a "half-mitre," and other articles already described by us on a former occasion were not worn by him alone, as the "Cihuacohuatl" enjoyed the same privilege.²⁵¹ This, and the burial-rites to which we cannot, here, refer in detail,²⁵²

the pueblo of Acachinanco," to the south of Mexico, in the direction of San Antonio Abad, says *Bustamante* (note a). This was while "Water-Rat" was "chief of men." That the "chief of men" moved alone, or with a small escort only, in the middle of the street, is very natural. He was the head of the official household and the chief war-captain of the confederacy. His particular duty it was, therefore, to greet the strangers. On any ordinary occasion it would have been misplaced, and against all rules of Indian etiquette, for the chief-officers of a tribe to go out to meet them; but in this case, wavering between fear and curiosity, an exception was made. It is worthy of remark that even when the "chief of men" returned at the head of a victorious war-party, the "snake-woman" is not mentioned as sallying forth to greet him in person.

²⁵⁰This custom of addressing people to whom some deference is due, has been noticed among numerous tribes of America. Among the Mexicans it was not at all an exclusive mark of deference towards the chief-officer. His interlocutors did not look at him, neither did he look at them. See *Bernal Diaz* (Cap. XCI, p. 88, Vedia II), *Clavigero* (Lib. VII, cap. XI, p. 470). The latter is particularly important, although he but copies *Torquemada* (Lib. XIV, cap. I, p. 585) in the main. As far as other tribes are concerned, I but recall here the Peruvian "Inca." See *Francisco de Jerez* ("Verdadera Relacion de la Conquista del Perú y Provincia del Cuzco llamada la Nueva Castilla," etc., etc., in Vedia, Vol. II, p. 331), when Hernando Pizarro met Atahualpa for the first time: "los ojos puestos en tierra, sin los alzar á mirar á ninguna parte." Of the Indians of the gulf states of North America, it is said by *James Adair* ("History of the American Indians," p. 4): "They are timorous, and consequently cautious, . . . exceedingly modest in their behaviour." See also on the Northern Indians, *Lothel* ("Geschichte der Mission der evangelischen Brüder," Barby 1789, pp. 17 and 18). It would be superfluous to add further quotations.

²⁵¹*Durán* (Cap. XXVI, p. 215, cap. XLIV, p. 367). *Tezozomoc* (Cap. XXXVI, p. 57, cap. LXIX, p. 115, etc.). *Durán* (Lámina 8, Trat. I°).

²⁵²That the burial of the "Cihuacohuatl" took place after the same manner as that of the "Tlaca-tecutli," is proven by the "*Codice Ramirez*" (p. 87): "Hizieron obsequias solemnissimas y un enterramiento mas sumptuoso que el de los Reyes pasados, porque todos lo tenían por el amparo, y muro fuerte del gran imperio Mexicano." *Durán* (Cap. XLVIII, pp. 381 and 382): "el qual despues de muerto, su cuerpo fué quemado y sus cenizas enterradas junto á los sepulcros de los Reyes, haciendole las obsequias conforme á persona tal se deulan, de la mesma manera que á los reyes se hacian y sus grandeças pedian." *Acosta* (Lib. VII, cap. XVIII, p. 498): "le hicieron obsequias los Mexicanos, con mas aparato y demostracion que á ninguno de los Reyes aian hecho."

In connection with the burial rites it may be in place, here, to refer to a custom easily interpreted in favor of the assumption, that the "Tlaca-tecutli" was a monarch. It is the carving, in the live rock at Chapultepec near Mexico, of human shapes commemorative (or at least said to be) of each of these officers, towards the close of each one's lifetime. There can be no doubt as to the existence of such carvings. The last of hem, representing "Wrathful chief," was seen by *Don Antonio de Leon y Gama* ("Descripción Histórica y Cronológica de las dos Piedras que con ocasion del Nuevo Empeñado que se esta formando en la Plaza principal de México, se hallaron en ella el Año de 1790," Segunda Edición; 1833, Parte Segunda, pp. 80 and 81), as late as 1753 or 1754, when it was destroyed ("picada") by order of the authorities. Another figure, intended for

again establishes the equality in rank of both officers, and it also dispels the notions of royal etiquette and magnificence with which, more particularly, the figure of "Wrathly chief" (Montezuma) has been surrounded in history.

The "chief of men" as head of the official household needed many assistants and subordinates. He required stewards for the care of the stores and their daily apportionment.²⁵³ Especially did he need runners for the delivery of his messages. Such officers could be chosen by him and thus far, but no farther, did he enjoy the right of appointing subordinates.²⁵⁴ But the appointment to a certain duty by the "chief of men," did not confer any hereditary rank or office. On the contrary, it is even probable that most of these posts were filled by outcasts, since this was, properly, the group from which the inferior servants for the transaction of tribal business could be selected without disturbing the balance of power between the kins.

The "Tecpan" being, as we have already stated, the "house of the community," that is the place where the business of the entire social cluster (as far as the tribe could represent it) was transacted, and, furthermore, it being proven that the same "tecpan"

"Face in the Water," existed a few years previous to that date. According to *Señor Don J. F. Ramírez* ("Durán," p. 251, note 1 to Cap. XXXI), disfigured remnants, among which the sign "1 cane" (re-acatl) is plainly visible, can yet be noticed in the rock at Chapultepec on the eastern side of that celebrated hill or isolated bluff.

Now it is equally certain, that such carvings were not only commemorative of the "Tlaca-Tecuhlli," but also of the "Cihuacohuatl." See *Durán* (Cap. XXXI, pp. 250, 251). A somewhat different version, is given by *Tezozomoc* ("Crónica," Cap. XL, p. 65). It is remarkable, however, that comparatively little importance was attached to those funeral monuments. The place of Chapultepec itself, a very striking and conspicuous object and one with which many reminiscences were connected, was viewed as an object of "medicine." *Torquemada* (Lib. III, cap. XXVI, p. 303). That particular attention should be paid to the remains of an officer of high rank is very natural. It is found among the Iroquois, *L. H. Morgan* ("Ancient Society," Part II, Cap. III, pp. 95 and 96, also, "American aboriginal Architecture" in *Johnson's Cyclo-pædia*). It would be useless to dwell further on the subject since it will be fully treated of in one of my subsequent monographs.

²⁵³ It is not devoid of interest to notice, that this official household, in full "blast," appears only after the formation of the confederacy. *Códice Ramírez* (p. 65): "Puso así mismo este Rey por consejo y industria del sabio Tlacaell en muy gran concierto su casa y corte, poniendo oficiales que le servian de mayordomos, masetrales, porteros, coperos, pajes y lacayos, los quales eran sin número. . . ." This is not only confirmed by *Durán* (Cap. XXVI). *Tezozomoc* (Cap. XXXV and XXXVI), but even by *Torquemada* (Lib. II, cap. LIV, p. 169).

²⁵⁴ This can easily be inferred from the fact, already established, that all the other kinds of officers of anything like important rank, were elected and not appointed. See also the passage, already quoted elsewhere, of *Durán* (Cap. LXIV, p. 498), which is very interesting in a general way.

was also the regular seat and place of office of the highest authority or "tribal council," it follows that peculiar and distinct relations must have existed between that council and the officer, whose duty it was to dwell at this same house. These relations are explained to us, partly, by the statement that the "chief of men" was placed there as a watchman, to guard tribal Interests in the midst of confederate business.²⁵⁵ He was to be present, day and night, at this abode which was the centre wherein converged the threads of information brought by traders, gatherers of tribute, scouts and spies, as well as of all messages sent to, or received from neighboring, friendly or hostile tribes. Every such message came directly to the "chief of men," whose duty it was, before acting, to transmit its import to the "Cihuacohuatl," and through him to call together the "Tlatocan."²⁵⁶ Thus the "chief of men" occupied an intermediate position between the confederacy and the tribe. He might, ex-officio be present at the deliberations of the council, but that presence was not obligatory; and no decisive or commanding voice and vote was allowed him, beyond the weight that his reasoning and personal consideration for his merits and experience might carry.

Whenever any conclusion was reached, it became the "chief of men's" duty to provide for its execution. Thus, if traders returned ill-treated, beaten, and bruised, and the Mexican council clamored for revenge, he sent his runners to the confederate tribes, calling upon them for assistance, as the contract authorized the Mexicans to do. Sometimes these messengers were chiefs, selected by the council itself.²⁵⁷ The result of their mission was reported

²⁵⁵ An attentive perusal of *Sahagun* (Lib. VI, cap. X) will convince the reader of the truth of this statement. See also *Durán* (Cap. XLI, p. 328; cap. LII, pp. 414 and 415) and *Tezozomoc* (Cap. LVI, p. 92; cap. LXI, pp. 100 and 101; cap. LXXXII, p. 144).

²⁵⁶ *Durán* (Cap. XII, p. 169): "Vuelto á Tlacaellé, le mandó avisase á los de su consejo que ablasen. . . ." also (Cap. XVI, pp. 132, 134 and 136; cap. XXI, p. 123; cap. XL, p. 310; cap. XLI, p. 330; cap. LIII, p. 419, etc., etc.). "*Códice Ramírez*," (p. 66). *Tezozomoc* (Cap. XXI, p. 33; cap. XXXVIII, p. 60; cap. XL, p. 65; cap. XLII, p. 69; cap. LVII, p. 93; cap. LXVIII, p. 114, etc.). Besides, it must be inferred from the fact, already proven, that the "Cihuacohuatl" was the "foreman" of the council. In this capacity, it was to him that the "chief of men" had to communicate all business to be submitted to the council.

²⁵⁷ Instances of that kind are found profusely noticed in the specifically Mexican chronicles. Extensive quotations would become too lengthy, I therefore limit myself to mere indications, leaving the reader to consult the authors in question. *Tezozomoc* (*Crónica*," Cap. XXVII, p. 40, cap. XXVIII, p. 42, cap. XXXI, pp. 48 and 49, cap. XXXIV, p. 54, cap. XXXVII, p. 59, cap. LXXV, pp. 127 and 128, cap. LXXXVIII, p. 134, cap. LXXXIX, and XC, pp. 167 and 168). *Durán* (Cap. XVIII, pp. 156 and 157, cap. XIX, pp. 165 and 166, cap. XXI, p. 182, cap. XXII, p. 189, cap. XXIV, p. 201, etc., etc.).

back to the "chief of men."²⁵⁸ In case delegates arrived from other tribes, they had to be provided with lodgings. The "tecpan" was the place reserved for that purpose, and there they were accordingly quartered. They, consequently, first came into contact with the "chief of men," who was, officially, "mine host" for them, and who acted as intermediate between them and the supreme tribal authorities.²⁵⁹

No more striking illustrations of the foregoing can be found than the reception, by the Mexicans, of Cortés and his troops, at the pueblo of Tenuchtitlan. The house where the Spaniards were quartered was the "tecpan" or official house of the tribe, vacated by the official household for that purpose.²⁶⁰ In sallying forth to

In addition to these authorities I add in a general way, *Torquemada* (Lib. XIV, cap. II, p. 537). This author has evidently either copied from, or at least used the same sources as *Fray Geronimo de Mendicota* (Lib. II, cap. XXVI, p. 129). My learned and highly esteemed friend, Sr. Icazbalceta, ascribes to the statements of both authors "a common origin" i. e. "Tabla de Correspondencias." (p. 38). This common source, however, is found in *Zurita* ("Rapport," etc., pp. 118 and 119). From whom he, in turn, derived his information, has not as yet been ascertained.

²⁵⁸ See the authors quoted above. Also *Clavigero* (Lib. VII, cap. XXV, p. 502).

²⁵⁹ This follows from the facts already proven in regard to the duties of the "chief of men" as head of the official household. I would particularly refer to *Tezozomoc* ("Crónica," Cnp. XCVII, pp. 172 and 173).

²⁶⁰ "*Códice Ramirez*" (p. 87): "y con esto el gran Motecucuzuma, por el mismo orden que vino se volvió con el capitán Don Hernando Cortés, al qual y á los suyos mandó que aposentassen en las casas reales, donde se les dió muy buen recaudo á cada uno, segun las calidades de las diversas gentes que iban con el capitán El día siguiente el capitán Don Hernando Cortés hizo juntar á Motecucuzuma, etc., etc. . . . en una plaza que en la casa habia muy á propósito para esto." . . . ; (p. 88): "Porque acabada de hazer esta plática el buen capitán Don Hernando Cortés, los soldados saquearon las casas reales, y las demas principales donde sentian que habia riquezas En este tiempo recelándose el Marqués no resultase desto algun inconveniente prendió al gran Rey Motecucuzuma, poniéndole con grillos, y á buen recaudo en las casas reales junto á su mismo aposento . . . ;" (p. 89): "comenzaron á pelear con los españoles con tal furia que los hizieron retraer á las casas reales donde estaban aposentados." This is plain enough. It is commonly stated that the Spaniards were quartered at a great house belonging formerly to "Wrathy Chief's" father, "Face in the Water." The anonymous "*Fragmento No. 2*" (p. 139) has the following: "apartando la gente hasta que llegaron al palacio Real que habia sido de su padre de Motecucuzuma Axayacatzin, y entrando en una gran sala en donde tenia Motecucuzuma su estado, se sentó y á su derecha mano á Cortés, y hizo señas Cacama que se apartasen todos y diesen orden en aposentar los cristianos y amigos que traian en aquellos grandes palacios" This anonymous fragment is evidently of Tezucan origin. *Sahagun* (Lib. XII, cap. XVI, p. 24): "Luego D. Hernando Cortés tomó por la mano á Motecucuzuma, y se fueron ambos juntos á la par para las casas reales;" (Cap. XVII, p. 25): "De que los Españoles llegaron á las casas reales con Motecucuzuma, luego le detuvieron consigo;" (Cap. XXI, p. 28): "Como comenzó la guerra entre los Indios y las Españoles, estos se fortalecieron en las casas reales con el mismo Motecucuzuma" (Id. p. 29, Cap. XXIII, p. 31, etc., etc.). These statements are very positive, and the less suspicious, since they represent traditions from three different sources, all evidently furnished by eye-witnesses, namely: *Mexican* ("Cod. Ramirez"),

greet the newcomers at the dyke, "Wrathy chief" acted simply, as the representative of the tribal hospitality, extending unusual

Texcucan (Fragment No. 2) and *Tlailulcan* (Sahagun). The statements by Spanish eye-witnesses are of doubtful authority in this case, since none of them knew, or could know anything positive; and the pueblo was subsequently, so utterly destroyed that even its site could hardly be recognized. Nevertheless, the "old and new palaces of Montezuma" have become household words.

It is, nevertheless, interesting to compare the reports of eye-witnesses with the above quotations from aboriginal sources. Cortés ("Carta Segunda," Vedia I, (p. 25): "y tornó á seguir por ó la calle en la forma ya dicha, fasta llegar á una muy grande y hermosa casa, que él tenia para nos aposentar, bien aderezada." The house where "Wrathy Chief" staid with his household, appears to have been some distance from the Spanish quarters, since we read (p. 27): "dejando buen recando en las encrucijadas de las calles"—thus showing that crossings intervened. The following, however, is very plain, if not decisive ("Carta Tercera," p. 76): "E porque lo sintiesen mas, este dia fice poner fuego á estas casas grandes de la plaza, donde la otra vez que nos echaron de la ciudad, los españoles y yo estábamos aposentados; que eran tan grandes, que un principe con mas de seiscientas personas de su casa y servicio se podian aposentar en ellas; y otras que estaban junto á ellas, que aunque algo menores eran muy mas frescas y gentiles, y tenia en ellas Mutezuma todos los linajes de aves que en estas partes habia." This remark about the "principe con mas de seiscientas personas de su casa y servicio" evidently agrees with his previous statement concerning the household of "Wrathy Chief" ("Carta Segunda," p. 38): "La manera de su servicio era que todos los dias luego en amaneciendo eran en su casa de seiscientos señores y personas principales, los cuales se sentaban Y los servidores destos, y personas de quien se acompañaban henchian dos ó tres grandes patios, y la calle . . ." Consequently, Cortés himself plainly confirms the native authors above quoted. Andrés de Tápia ("Relacion," etc., p. 570): "é hizo aposentar al marqués en un patio donde era la recámara de los ídolos, é en este patio habie salas asaz grandes donde cupieron toda la gente del dicho marqués é muchos indios de los de Tascala é Churula que se habien llegado á los españoles para los servir." This eye-witness, therefore, does not mention either of the two "houses of Montezuma." The father of the tale is found in Bernal Díaz de Castillo (Vedia II, Cap. LXXXVIII, p. 84): "E volvamos á nuestra entrada en México, que nos llevaron á aposentar á unas grandes casas, donde habia aposentos para todos nosotros, que habian sido de su padre del gran Montezuma, que se decia Axayaca, adonde en aquella sazón tenia el gran Montezuma sus grandes adoratorios de ídolos"

Thus Cortés, who is the principal eye-witness in the case, unmistakably states that the Spaniards were quartered at the "tecpan." Of the other two conquerors, only the last mentions the Spanish quarters as being the "house of Montezuma's father," whereas Tápia is silent on the subject. Taken in connection with the assertions of the native writers, the statements of Cortés become of great weight.

It is but natural to expect (and the fact needs no proof) that the subsequent writers have followed either one or the other of the two versions. After having transcribed the letters of Cortés, Ovando (Lib. XXXIII, cap. XLV, p. 500) mentions also: "aposentó aél é á los chripstianos, en unas casas que avian seydo de su padre," which statement he gathers from other conquerors (p. 494) whose names he fails to give; (Cap. XLVII, p. 507) he calls the said house "la morada de su abuelo." I forbear further abstracts.

Fortunately an official document of early date informs us of the exact situation of these two buildings. It is the "Merced á Hernán Cortés de Tierras inmediatas á México, y Solares en la Ciudad" (Col. de Doc's Icazbalceta, Vol. II, pp. 28 and 29). It bears date, Barcelona, 23 July, 1539, and conveys to Cortés: "los solares é casas son la casa nueva que era de Montezuma, que alinda por la una parte con la plaza mayor é la calle de Iztapalapa, é por la otra la calle de Pero Gonzalez de Truxillo, é de Martín López, carpintero; é por la otra la calle en donde están las casas de Juan Rodriguez, albañil; é por la otra la calle pública que pasa por las espaldas: é la casa vieja que era

courtesies to unusual, mysterious, and therefore dreaded guests. Leaving these in possession of the "tecpan," he retired to another of the large communal buildings surrounding the central square, where the official business was, meanwhile, transacted.²⁶¹ His return to the Spanish quarters, even if compulsory, had less in it to strike the natives than is commonly believed. It was a re-installation in old quarters, and therefore the "Tlatocan," itself, felt no hesitancy in meeting there again, until the real nature of the dangerous visitors was ascertained, when the council gradually withdrew from the snare, leaving the unfortunate "chief of men" in Spanish hands.²⁶²

We have qualified the position of the "Tlacatecutli" towards the council as intermediate between tribe and confederacy. In the latter body, he was but the general-in-chief and had no other duties or power.²⁶³ Therefore, when Cortés seized the head-chief of Tezcuco, "Wrathy chief" had no authority to assure the Spaniards, although they called upon him for that purpose.²⁶⁴ He ex-

de Montezuma, donde vivís, que alinda por la frontera con la plaza mayor é solares de la iglesia, y la placeta; por un lado la calle nueva de Tacuba, é por otro la calle que va de la plaza mayor á S. Francisco; por las espaldas la calle donde están las casas de Rodrigo Rangel, é de l'ero Sanchez Farfán, é de Francisco de Terrazas, é de Zamudio."

From these data it is easy to recognize in the present National Palace the site of the so-called "new houses of Montezuma," and in the buildings facing the "Empedradillo" the "Old houses." Both faced the central square of the pueblo.

The so-called "old houses" were also immediately in front of the central "house of God." It is said by Tezozomoc (Cap. LXX, p. 117): "Este templo y cerro estaba puesto alonde fueron las casas de Alonzo de Avila y Don Luis de Castilla, hasta las casas de Antonio de la Mota, en cuadro." Now according to *Icazbalceta* ("Los tres Diálogos," etc., notes to Sec'd Dialogue, p. 218): "La casa de Alonzo de Avila estaba en la la calle del Reloj, esquina á la de Sta Teresa la Antigua." Consequently the "old houses" were indeed those which Bernal Diez mentions as "where Montezuma at that time had his great adoratories." Now these "old houses" were, as we have seen, the "tecpan" or official house of the Mexican tribe. This again fully sustains our proposition that the Spaniards were quartered there, and that the official household had vacated it for that purpose.

²⁶¹ This fully explains the designation by, "New houses of Montezuma" mentioned in the preceding note.

²⁶² That the council met at the Spanish quarters, is plainly stated by *Bernal Diez de Castillo* (Cap. XCV, pp. 95 and 96, Cap. XCVII, p. 98). *Oriedo* (Lib. XXXIII, cap. XLVII, p. 509). That the members of the council gradually withdrew, is equally certain, from the fact that a successor to "Wrathy Chief" was elected, while the latter was still alive and a captive of the Spaniards.

²⁶³ *Durán* (Cap. XLIII, p. 347). *Zurita* ("Rapport," etc., p. 11): "Le souverain de Mexico avoit au dessous de lui ceux de Tacuba et de Tezcuco pour les affaires qui avoient rapport á la guerre; quant á toutes les autres, leurs puissances étoient égales, de sorte que l'un d'eux ne se mêloit jamais du gouvernement des autres;" Id. (pp. 98 and 96). *Mendieta* (Lib. II, cap. XXXVII, p. 156). *Herrera* (Dec. III, lib. IV, cap. XV, p. 133). The two latter authors evidently have followed *Zurita*. See also note 4.

²⁶⁴ See note 4. *Fragmento No. 2*, in "*Biblioteca Mexicana*" (pp. 142 and 143).

exercised no command over the other tribes except in the field. Still, his position, as confederate leader, was important enough to make the right to invest him with that dignity one of the conditions of the agreement under which the confederacy was formed. Hence the two head-chiefs of Tezcuco and Tlacopan are frequently mentioned as "electors" of the "chief of men." But their presence at the inauguration of every new officer of that rank did not imply the right to control his election.²⁶⁵ It was a mere act of courtesy which the Mexicans returned, as often as their associates performed the same ceremony,²⁶⁶ with this difference, however, that in the case of the Mexican chieftain, the two confederates appeared personally as being thereafter his military subordinates.

The military organization of the ancient Mexicans has already been described elsewhere,²⁶⁷ and, so far, we have nothing to add to that picture. In it, as well as in social organization, the kin formed the basis, and since we have found, in the autonomous kin, that the military chieftains were the officers of justice, we are justified in looking for the officers of *tribal* justice among the chiefs of highest grade in the tribal forces. The "Cihuacohuatl" as ex-officio war-chief of the tribe could not, as we have already seen, officiate in that capacity; but the "chief of men" was very distinctly clothed with the power to punish, even to such an extent as to impart to it the character of arbitrariness and despotism. If, however, we examine closely the instances reported, they appear to limit themselves:—

1. To cases of insubordination, unfaithfulness, or treachery within the official household:²⁶⁸

²⁶⁵ "Tenure of Lands" (p. 417). *Zurita* ("Rapport," etc., p. 15): "Si le souverain de Mexico mourait sans héritier, les principaux chefs lui choisissaient un successeur dont l'élection était confirmée par les chefs supérieurs de Tezcoco et Tacuba." "Codice Ramírez" (pp. 66, 67 and 72). The chiefs, of Tezcuco and Tlacopan, are mentioned as "electors," but stress is placed only on the fact, that they "crowned the King." This evidently means investiture only. *Sahagun* (Lib. VIII, cap. XXX, XXXI, XXXII, XXXIII and XXXIV). Although very full of details, he plainly avoids mentioning the chiefs of Tezcuco and Tlacopan as taking part in the election (p. 318). *Durán* (Cap. XXXII, p. 256, XXXIX, pp. 302 and 303. Cap. XLI, p. 325).

²⁶⁶ *Zurita* (p. 16). *Gomara* ("Conquista de México," Veda I, p. 435). *Tezozomoc* (Cap. CI, p. 170).

²⁶⁷ "Art of War and Mode of Warfare of the Ancient Mexicans," 10th Report Peabody Museum, 1877.

²⁶⁸ Therefore the recommendation, by the "Cihuacohuatl," to the newly appointed servants and runners in the official household: "and behold that, where you enter, there are many valuable women, and also slaves, watch that you do not go astray, for at once you will be destroyed without the knowledge of any living soul" *Tezozomoc* (Cap. LXXXIII, p. 146). It is evident that the "chief of men" had, in such

2. To cases of military insubordination, or treachery:²⁶⁹

3. To instances of great importance, demanding sudden action in order to avoid public danger.²⁷⁰

cases, the right of summary punishment, as well as in the case of unfaithful stewards or disobedient subordinates in general. Compare, on the same subject, *Durán* (Cap. LIII, pp. 419 and 420). The fact, that the "Chinacohuati" spoke to the young men, further shows that the exercise of such extreme power was known to, and sanctioned by, the council.

²⁶⁹ Quotations are useless, the necessity for such a power being too plain. But it is well, here, to state that among much ruder tribes even, and where the democratic element was carried to its greatest extremes, arbitrary punishment by war-captains sometimes occurred. Thus it is asserted that, at the bloody engagement of Point Pleasant, Va., 10 of October, 1774, "Cornstalk," the great Shawnee war-chief, tomahawked one near him who had "by trepidation and reluctance to proceed to the charge, evinced a dastardly disposition." *Alex. S. Withers* ("Chronicles of Border Warfare," Chap. VII, p. 138). It explains also the summary punishment of traitors and deserters, as well as of those who assumed the dress of the prominent war-chiefs during a raid or an engagement.

²⁷⁰ The incarceration of runners or messengers may be (and has been to me in conversation by an aged friend) brought up in proof of the belief, that the "chief of men" had a despotic power. Instances of that kind are related by *Tezozomoc* (Cap. CVI, p. 189). This is the truly admirable description of the first news brought to México of the approach of European ships. It is too lengthy to be inserted here. A runner from the coast carried the news, and "Wrathful Chief" said to Petlacalcati, take him to the cell made of logs (probably split logs, "tablon") and look after him. This was done to keep the news secret until the matter could be investigated, and was, therefore, a preliminary measure of policy. But, aside from the fact that the isolation rather than incarceration (since the latter would have been death) of a news-carrier was a matter of policy, and as such a duty of the "chief of men," it was also an established custom among the Mexicans. This is stated by *Sahagún* (Lib. VIII, cap. XXXVII, pp. 327 and 328): "Habiendo cautivado á alguno, luego los mensageros que se llamaban tequipantlilanti, venían á dar las nuevas al rey de aquellos que habían cautivado á sus enemigos, y de la victoria que habían obtenido los de su parte y el señor los respondía diciéndoles: "Seais muy bien venidos, huélgome de oír esas nuevas, sentad y esperad, porque me quiero certificar mas de ellas, y así los mandaba guardar, y si hallaba que aquellas nuevas eran mentirosas, hacíalos matar." *Torque-mada* (Lib. XIV, cap. I, p. 536): "y que no le dejasen salir de Palacio hasta tener segundo Correo, que confirmase aquella buena nueva, que él havia traído. *Vetancurt* ("Teatro," Parte IIa, Trat. II°, cap. II, p. 381), almost a textual copy of the preceding author, as might be expected.

Among the many tales of prodigies, supernatural warnings, witchcraft, etc., etc., connected with the months and years immediately preceding the arrival of the Spaniards in Mexico, there is, also, one bearing a particularly pure Indian character. See *Durán* (Cap. LXVIII, pp. 524-530). *Tezozomoc* (Cap. CVI, p. 188 and 189). "Wrathful Chief," alarmed by mysterious prognostics, called upon all the old men, women, and the medicine-men, to report what they *might dream* or *had dreamt* within a certain lapse of time. It is well known what high value is attached by the Indians in general to dreams. There can be no doubt that, with the prevailing notion that dreams contained important and solemn premonitions, warnings from a higher source (*Sahagún* Lib. V), the request to communicate such dreams for the benefit of the tribe, to the "chief of men," was very natural. According to *Motolinia* ("Hist. de los Indios de la Nueva-España," Col. de Doc., Trat. II, cap. VIII, p. 130), certain men were particularly expert in explaining and interpreting dreams, so much so, that they were generally applied to for such purposes. If now, as the story in question has it, the said people refused to comply with such requests, the "chief of men" might, of his own accord,

The power to appoint, which the "chief of men" enjoyed within the limits of the official household, implied, to the same extent, the power to remove and to punish. It was not even necessary to refer such cases to the action of the council.

In punishing summarily acts of insubordination, or of treachery, when committed during warfare, the "chief of men" acted as commander-in-chief and in strict compliance with the duties of that office.

Lastly, a certain amount of discretionary power was necessarily vested in the chief commander for the public good. Placed at the "tecpan" to "watch, guard and protect" the tribe and the confederacy, it was necessary to empower the "Tlacatecutlli" in cases of great urgency, to act "on the spur of the moment." It was not a privilege of royalty or a despotic right, but an obligation resulting from the nature of the office.

Consequently the "chief of men" was not, properly, the executioner of tribal justice either. This duty devolved upon other war-chiefs of lower rank, who, although superior in command to the leaders of the kins, when on the war-path, never otherwise interfered with the duties of the latter, any more than tribal jurisdiction conflicted with that of the autonomous kins. These chiefs were the "four leaders of the four great quarters of Mexico Tenuchtitlan,"²⁷¹ or, as we have already intimated, of the four *phratries* into which the twenty kins had again agglomerated for religious and military purposes. These four "great quarters," named respectively, "Moyotlan," "Teopan," "Aztacalco" and "Cuepopan,"²⁷² were not, as the current notion has it, so many governmental subsections, or wards of aboriginal Mexico. Shells

even treat them as traitors, and secure their persons to prevent injury to the public cause. All this, of course, provided the story be true!

The cases where secrecy is enjoined under penalty of death, are so plain that no illustration is needed. The "chief of men" had the right, in preparing general business, to give secret orders, to detail particular persons on secret missions. Anyone divulging the secrets entrusted to him, committed an act of treason, and therefore it was necessary that he should be chastised on the spot and on the spur of the moment, to obviate further mischief.

²⁷¹ "Art of War" (pp. 120, 121 and 122, especially notes 97, 99 and 101).

²⁷² The formation of these geographical circumscriptions I have already explained. The names can, in part, be etymologized. They are respectively: "Moyotlan" or place of the mosquito, from "moyotl," mosquito (*Molina* II. p. 58); "Teopan" or place of God, from "Teotl," God; "Aztacalco," "place of the house of the heron," from "Aztatl," heron (*Molina* I, p. 65 and II, p. 10), and "cailli," house; "Cuepopan" or "place of the dyke," from "cuepotli," dyke (*Molina* I, p. 23, II, p. 26). All of which are, respectfully, submitted.

of as many original kins, common worship, perhaps, and common leadership in battle, were all that remained of the former organic cluster.²⁷³ Rites of worship, as practised by a phratry, it is not the place here to investigate, and the position and functions of the phratry in warfare have already been discussed by us. The office of tribal executioners of justice, however, vested in the "four leaders" of the four phratries, deserves particular attention here.

The names of the four war-captains or rather their official titles, are: "man of the house of darts" (Tlacochealcatl), "cutter of men" (Tlacatecatl), "bloodshedder" (Ezhuahuacatl), and "chief of the Eagle and prickly pear" (Cuauhnochtécuitli). These officers are first noticed in the beginning of the fifteenth century, at the time the confederacy was formed.²⁷⁴ They appear as immediate adjuncts or assistants — military lieutenants as it were — to the "chief of men" then promoted to the position of confederate commander, as well as of the "Cihuacohuatl."²⁷⁵ Their

²⁷³ These four geographical clusters, each comprising a certain number of original kins or *calpulli*, became known subsequently as the four Indian wards of Mexico, named respectively, San Juan (Moyotlan), San Pablo (Teopan), San Sebastian (Aztlacalco), Santa María (Cuexopopan). *Texozomoc* (Cap. LIX, p. 18), *Petancurt* ("Crónica," etc., p. 124), *Durán* (Cap. V, p. 42). That each of them comprised a certain number of kins has already been stated. The four chiefs are often mentioned as "councillors;" but their very position as immediate assistants to the "chief of men," is clearly established by the "*Códice Ramírez*" (pp. 57 and 58), which agrees with *Durán* (Cap. XI, p. 103) and also by *Sahagún* (Lib. XXX, p. 318): "Elegido el señor, luego elegian otros cuatro que eran como senadores que siempre habían de estar al lado de él, y entender en todos los negocios graves del reino." . . . This makes it evident that they must have been war-chiefs, and not representatives, in the supreme council, of an administrative circumscription superior to the "calpulli" — "barrio" or localized kindred group. The four "main quarters" therefore formed *military* bodies only, and this follows plainly from the detailed descriptions of warfare, so profusely given in the chronicles of *Texozomoc*. The truth of this fact has been felt, though not fully understood, by *Clavigero* (Lib. VII, cap. VII, p. 494 and 495) where he hints at the four chiefs (under various names) as so many "classes of generals." These four superior war-captains are, besides, found also in Michhuacan, "*Relacion, etc., etc., Mechuacan*" ("Primera Parte," p. 13): "tenia puesto cuatro señores muy principales en cuatro fronteras de la provincia," and in Peru, where they have been decorated with the titles of "vice-roy."

It is interesting to note here that the term "barrio" is applied by Spanish authors indiscriminately to the four great subdivisions and to the kins themselves.

²⁷⁴ *Durán* (Cap. XI, pp. 97, 102 and 103), *Texozomoc* (Cap. XV, p. 21) both place the organization by which these four chiefs appear prominent, immediately after the overthrow of the Tepaneca, and before the confederacy with the Tezcucans and Tlaco-pans. *Ixtlilxochitl* ("*Hist. des Chichimèques*," Cap. XXXIV, p. 23) speaks in general terms of a "reorganization," after the confederacy had been formed. So does *Acosta* (Lib. VII, cap. XVI, p. 483), while "*Códice Ramírez*" (pp. 57 and 58) agrees with the two first.

²⁷⁵ It is self-evident that these four chieftains were also inferior to the "snake-woman;" and this fact is amply illustrated. *Durán* (Cap. XVI, pp. 140 and 141) con-

office was, of course, elective and non-hereditary, and the election took place in the same manner and (sometimes, at least) at the same time as that of the "chief of men."²⁷⁶ In case the latter was unable to lead the confederate forces on the war-path, and the "Cihuacohuatl" himself was not available either, then the posts of chief commander as well as of leader of the Mexicans proper, might be filled by one or the other of them.²⁷⁷ This, however, was always a temporary situation, and there appears to have been no difference of rank between the four, since the Mexican

cerning "Ezhuahuacatl," Cap. XXII, p. 189): "y luego Tlacaellel, príncipe de la milicia, mandó en nombre del rey que fuesen apercebidos, etc., etc. . . ." "Llamó el rey á un señor que se llamava Cuauhnóchtli y hizolo general de toda la multitud diciéndole que Tlacaellel era ya viejo y que no podría ya ir á guerra tan apartada, dándole todas las exenciones y autoridad que semejante oficio requería, . . ." (Cap. XXXIV, p. 267, etc., etc.). *Tezozomoc* (Cap. XVII, p. 27), Tlacaellel, subsequently elected "Cihuacohuatl," was then only "Tlacochealcatl," and he is, at that time, merely mentioned as "uno de ellos de los capitanes." Still (p. 28) he appears as "capitán general de ellos." (Cap. XXII, p. 34): "Respondió Tlacochealcatl y dijo: quiero dar aviso á Tlacocheatl, y á Tlacochealcatl, para que publiquen luego en toda esta república esta guerra por los varrios, . . ." (Cap. XXVIII, p. 43): "mandaron el rey Moctezuma y Zihuacatl, á los capitanes Tlacocheatl, Tlacochealcatl, Cuauhnóchtli, y Tlilancalqui, que luego al tercer día se aperciesen y pusiesen en camino con sus armas y vituallas," etc., etc. This entire "Crónica" bristles with facts of that kind, too numerous to quote. The fact, amply proven heretofore, that the "Zihuacatl" was also ex-officio head-war-chief of the tribe of Mexico, is alone sufficient to establish the inferiority of the four others. See "*Códice Ramírez*" (p. 67).

²⁷⁶ In evidence of this there is the entire series of specifically Mexican authors, starting with the "*Códice Ramírez*" (p. 57): "Primeramente ordenaron que siempre se guardasse este estatuto en la corte Mexicana, y es que despues de electo Rey en ella, eligiessen quatro señores, hermanos ó parientes mas cercanos del mismo Rey, los quales tuviessen ditados de principes: los ditados que entouces dieron á estos quatro el primero fué . . . (follow the four names and titles). . . ." The same version has been adopted with more or less variation, by *Durán* (Cap. XI, pp. 101 and 103), *Tezozomoc* (Cap. XV, pp. 24 and 25), *Joseph de Acosta* (Lib. VI, cap. XXV, p. 441) and *Herrera* (Dec. III, Lib. II, cap. XIX, pp. 75 and 76). Besides, there is the independent version of *Sahagún* (Lib. VIII, cap. XXX and XXXI, pp. 318 and 319), who is even too positive, stating, or at least leading to the inference, that at every election of a "chief of men," the four offices were also newly filled, and invested at the same time. This appears to be a misconception, explained by the *Códice Ramírez* and by *Durán*.

It may be in place here to refer to a different version, which reduces the number of these assistants to the "chief of men" to two only. We find it in *Gomara* ("*Conquista*," Veda I, p. 442): "Las apelaciones iban á otros dos Jueces mayores, que llaman tecutlatl, y que siempre solian ser parientes del señor . . ." and also in *Zarita* ("*Rapport*," etc., p. 45). By reference, however, to *Sahagún* (Lib. VI, cap. XX), it will be seen that the celebrated Franciscan speaks of only two of the four which he mentions (Lib. VIII, cap. XXX). These two are "Tlacochealcatl" and "Tlacocheatl" ("Tlacocheatl" and "Tlacocheatl" by abbreviation), whom he again calls (Lib. VIII, cap. XXIV, p. 311) "principal captains, of which there were always two," while (Lib. IX, cap. I, p. 336) he calls the same, "governors of Tlatilulco." The Tlatilulcan tradition appears very plainly in the writings of the learned friar, whose writings have wielded such a vast influence in literature on aboriginal Mexico.

²⁷⁷ "*Art of War*" (p. 122), *Sahagún* (Lib. VIII, cap. XXIV, p. 311), *Durán* (Cap. XXII, p. 189), *Clavigero* (Lib. VII, cap. XXI, p. 494).

chroniclers mention them indiscriminately as military captains of the highest rank. Still, while this fact remains undisputed, we notice among later authors that two of the four, namely: "Ezhuahuacatl" and "Tlacateccatl" are called: "judges."²⁷⁸ How the duties of a judge sitting permanently, could be performed by a war-chief, is rather difficult to comprehend, whereas those of a chief executioner of judicial decisions agree well with those of a military office, in primitive society. "Cuauhnoc-tecuhtli" is positively stated to have been "chief executioner" ("alguazil mayor") or sheriff.²⁷⁹ The *Codex Mendoza*, however, makes all four equal, by calling each of them "executive officer." Samuel Purchas, in his "Pilgrimage," renders this incorrectly by "officer of dispatch."²⁸⁰ Such was indeed their true position. What the "elder brother" was to the kin, the four great war-captains were to the tribe. To them the judicial decisions of the council were communicated through the "Cihuacohuati" or the "Tlacatecuhtli," and they were intrusted with their execution. Consequently they superintended the maintenance of order and quietness at every place where the tribal authorities exercised control, as, for instance, in the markets, and in the central square encompassing the great "house of God." But they were also the immediate military assistants of the "chief of men," and as such, as far as he exercised any power to punish, they also acted as his "executive officers" when necessary.²⁸¹ It is doubtful, however, if the four leaders

²⁷⁸ The "Tlacatecatl" is called a "Judge," second in jurisdiction only to the "Cihuacohuati" by *Torquemada* (Lib. XI, cap. XXV, p. 392). The same author calls him a "valiant captain" (Lib. II, cap. LXXVI, p. 211). After this author, he has been called a Judge by *Vetancurt* (Parte IIa, Trat. II, cap. I, p. 370), by *Clavigero* (Lib. VII, cap. XVI, p. 481). It is singular to notice that for instance *Vetancurt* (Parte IIa, Trat. I, cap. XVIII, p. 320) mentions that "Water-Rat" ("Ahuitzotl") was "Tlacatecatl, captain general of the Mexicans." In this he follows *Torquemada* (Lib. II, cap. LXXIII, p. 186), who, in turn, agrees with his predecessor, *Mendieta* (Lib. II, cap. XXXV and XXXVI, p. 151). The latter is particularly explicit. His statements agree with those of the *Codex Mendoza* (plates XIII and XVIII). "Ezhuahuacatl" is also represented as "alcalde" in the *Codex Mendoza* (plate LXIX, tercera Partida, No. 18), which again represents him as "executor" (plate LXVI, tercera Partida, No. 10). All this tends to show that these officers, besides being principal war-captains, were also executors of judicial decrees.

²⁷⁹ *Ramírez de Fuenal* (*Lettre*, Mexico, 3 Nov., 1532, "Premier Recueil," etc., p. 248): "Un officier, nommé Guamuichil, remplit les fonctions d'alguazil mayor. . ." *Torquemada* (Lib. XI, cap. XXV, pp. 392 and 393), *Vetancurt* (Vol. I, p. 370, etc.), *Clavigero* (Lib. VII, cap. XVI, p. 481). The "*Codex Mendoza*" (plate LXVI, tercera Partida, No. 7) calls him "executor," like "Tlilancalqui" and "Ezhuahuacatl."

²⁸⁰ *Codex Mendoza* (plates LXVI and LXVIII). In the latter he calls them "Valientes." For the interpretation of Purchas see *Kingsborough* (Vol. VI, pp. 73 and 74).

²⁸¹ Instances of that kind are frequently found, both in Durán and Tezozomoc.

had the right to appoint the assistants whom they needed, beyond sending out subordinates, or rather detailing them on particular errands. As to watchmen in the market-places,—the officers who circulated about preserving peace and order there—they were placed at their posts by the tribe. But it was their duty to report to the chief executive officers, nay, to apply to them for assistance, whenever anything happened which required the exercise of higher power. On the other hand, these subalterns obeyed their orders in the interests of tribal business.

We have already noticed that, among the four, "Cuauhnochtcutli" is most distinctly mentioned as judicial executioner, even prominently before the others. But this officer again is lost sight of at the election of a "chief of men." Then another looms up in his place. This is the "man of the black house," Tlilancalqui. It appears that each of the three first-named positions namely: "Tlacochealcatl," "Tlacateccatl," "Ezluahuacatl," was, together with the last-named "Tlilancalqui," a preparatory stage for the office of "chief of men."²⁸² "One of these four had to be elected king" says the Codex Ramirez.²⁸³ While it is difficult to

²⁸² This statement rests upon the authority of the "*Codice Ramirez*" (p. 58), which document agrees almost verbally with *Durán* (Cap. XI, p. 103). Aside from *Tezozomoc* (Cap. XV) and *Acosta* (Lib. VI, cap. XXV), who both, though rather vaguely, confirm the above, there are other indications confirming it. For instance: *Codex Mendoza* (plate XI, interpretation or rather text): "Yten el dicho Tlacochealcatl fue por extremo valiente y velicoso en armas, y antes que subciesse en el dicho señorio, hizo por su persona en las guerras cosas hazafiosas de valentia, por donde alcanzo tomar dictado de Tlacatecatl, que tenia por titulo de gran calidad y estado, y era el punto de que en vacando dicho señorio, el tal punto y grado subcedia luego en el dicho señorio, lo qual asimismo sus antecesores hermanos otras contenidos, y padre, y aguelo tuvieron el mismo curso de los titulos y dictado, por donde subieron a ser señores de Mexico." Again (plate LXVIII, tercera partida), no difference is made between "Tlacatecatl" and "Tlacochealcatl;" both are called "valientes" and "capitanes de los exercitos Mexicanos." *Torquemada* (Lib. II, cap. LV, p. 172): "y que Axayncatl, Hijo de Tezozomoc (Señor Mexicano) era Hombre Valeroso, y de mui gran fuerte, para el Reinado, fue de comun consentimiento, pasado a esta Dignidad, de la que tenia de Tlacochealcatl, y Capitan General, y hecho Rei." (Cap. I, XIII, p. 189): "Ahuizotl, Hermano del Difunto, y de su Antecesor Axayncatl, era Tlacatecatl, ó Capitan General de los Mexicanos. . . ." Thus he acknowledges that both Tlacatecatl and Tlacochealcatl were alike eligible. It is but natural to read similar assertions in *Petancart* (Parte IIa, Trat. I°, cap. XVI, p. 305, cap. XVIII, p. 320), and *Clarigero* (Lib. IV, cap. XVIII, p. 283, cap. XXII, p. 287). This author speaks of the different "chiefs of men" having been "generals in chief" of the Mexicans. Now since (Lib. VII, cap. XXI, p. 494) he states that the "Tlacochealcatl" was the "principal" among the war-captains, it follows, that the chiefs named by him had all attained that rank. But we know that other authorities frequently give them another title also, therefore the conclusion is but natural that there were several head-chiefs for military purposes, etc., from whom the "chief of men" might be chosen.

²⁸³ "*Biblioteca Mexicana*" (p. 58).

conceive why the captain "Cuauhnochtecuhli" should *not* be one of the privileged four, it is easy to understand why the "man of the black house" should be of that number. The dark house, "Casa Lobrega" of Nuñez de la Vega, in Chiapas, plays a conspicuous part in the worship, or "medicine" of the aborigines of Mexico and Central America.²⁸⁴ The "man of the black, or dark house," was therefore an intermediate between "medicine" and tribal government. As such, he appears to occupy a stage preparatory to the high office of "chief of men," and represents, together with the "satraps and papaonqui" named by Sahagun,²⁸⁵ the element of medicine or worship in the election of that officer. "Tlilancalqui" is occasionally, though rarely, mentioned as a war-chief,²⁸⁶ but missions of importance appear to have been intrusted to him; and Joseph de Acosta calls the three other chiefs "warriors,"²⁸⁷ to his exclusion; and finally, he is made a confidential advisor in times of great public danger. This is about all we know of this office, in relation to the government of the Mexican tribe.

The fact, amply proven as it is, that the "chief of men" had to be selected from among the four chiefs and officers enumerated, bears directly on the nature of the dignity with which the "Tlacatecuhtli" was invested. It fully disposes of the assumptions, that this officer was anything but an Indian war-chief of the highest order, or that heredity was attached to the office, though it does not disprove succession of office limited to any single *kin*. While it thus explains many incidental features of organization and government, it leads us back to the office of "chief of men" and through it, recalls some of the fundamental attributes of the tribe.

²⁸⁴ J. H. von Minutoli ("Beschreibung einer alten Stadt in Guatemala," etc., "*Teatro Crítico Americano*," by Felix Cabrera, German translation, p. 31): "house of darkness which he (Votan) had built in the space of a few respirations." But the dark house is yet more positively noticed in Guatemala. *Popol Vuh* (Part II, chap. II, p. 85): "Gekuma Ha," from "Gek" black, "*Grammaire Q'quiché*" (p. 180). Also (Chap. VIII, p. 147, cap. IX, pp. 148 and 149). It is interesting to notice, in connection with this, that the same gathering of aboriginal traditions also mentions (p. 81) a house filled with lances (darts): "R'oo chicut Chayim-ha u bi, utuquel chakol chupam zaklelohre chi cha, chi tzininic, chi yohohic, chiri pa ha." (Cap. IX, p. 154): "qate chicut ta x-e oc chi qabolab pa Chaim-ha." This corresponds with the Mexican "Tlacochealcuhtli." Again we are treated (p. 86) to a "house of tigers" also repeated (p. 134), and it is easy to recognize in it a counterpart to the "Tlacatecatl." Thus again the analogy between the Guatemaltecos and the Mexicans, appears sustained to some extent.

²⁸⁵ "*Historia general*," etc. (Lib. VIII, cap. XXX, p. 318).

²⁸⁶ By Tezozomoc. Quotations are superfluous. See his "*Crónica*."

²⁸⁷ "*Historia natural y moral de Indias*" (Lib. VI, cap. XXV, p. 441).

We have already stated that the tribe was a voluntary association of kins for mutual protection. Though this was undoubtedly the original purpose, it becomes evident that, in course of time and as a result of success in warfare, the tribe, as a military organization, grew into a cluster for procuring and increasing subsistence.²⁸⁸ This was achieved by gathering booty in successful raids, and by imposing tribute upon tribes whose military power had been overcome in such dashes and forays.

Previous to the formation of the confederacy, but few tribes had been conquered by the Mexicans.²⁸⁹ In fact, it was the nearly equally balanced power of the Pueblos occupying the lake basin, that made the formation of that confederacy possible. Such a course was necessary to prevent them from destroying each other for the benefit of expectant neighbors.²⁹⁰ But when once this confederacy was formed, then their joint efforts were directed to conquest, and to the acquisition of the means of subsistence through tribute. As the imposition of tribute was a military measure, so, also, its collection was in the hands of the *military* branch of the tribal government. This is evident from the fact that the kins had delegated to the tribe all authority over outside matters.²⁹¹ Hence the "chief of men" became the official head of tribute-gatherers.²⁹²

²⁸⁸ "Art of War" (pp. 96, 97 and 98, also notes).

²⁸⁹ The number and names of these tribes are yet undefined. The specifically Mexican sources insisting upon a conquest of Tezcuco (by force of arms) by the Mexicans, it follows that, according to the *Codice Ramírez* (pp. 51 to 61), the tribes subjected before that supposed event, were the Tecpanec, the Xochimilca, and those of Cuiclahuac, or the settlements to the west and southwest. *Durán* (Cap. IX to XV) and *Tezozomoc* (Cap. VIII to XX) concur; so does, of course, *Acosta* (Lib. VII. cap. XII to XV). The *Codex Mendoza* (plates V and VI) adds to the above the pueblos of Chalco, Acolhuacan and of Quauhnhuac (Cuernavaca). If we compare it with the *Tezcucan* tradition, as reported by *Ixtlixochitl* ("Hist. des Chichimèques," Cap. XXXI, p. 216) we notice that it is claimed for that tribe, that it assisted the Mexicans in the conquest of Xochimilco and Cuiclahuac, although the formal confederation took place (according to the same authority, Cap. XXXII) some years later. According to *Torquemada* (Lib. II, cap. XLII, pp. 148, etc.), *Vetancurt* (Parte IIa, Trat. 1°, cap. XIV, p. 291), the Xochimilcas were conquered by the confederates. According to *Feyta* ("Historia antigua," Lib. III, cap. I, p. 150), the Tezcucans subjected Xochimilco. *Clarigero* (Lib. IV, cap. V, p. 253) agrees with the Mexican version.

²⁹⁰ "Codice Ramírez" (p. 61).

²⁹¹ This resulted from the constitution of the tribe, as an association of kins for mutual protection and sustenance.

²⁹² *Tezozomoc* (Cap. X, p. 18): "y aunque envian a darlo a Ytzecontl era para todos los Mexicanos en comun." The fact that the gathering of tribute was directly controlled by the "chief of men" is so generally admitted that it hardly needs any further proof. *Ramírez de Fuenleal* ("Lettre," etc., p. 248, 1er Recueil) ascribes the gathering of tribute to an officer whom he calls "tecuxalcatectli." This should be, properly,

Whenever any tribe, with or without a struggle, yielded to the warlike power of the Mexicans and their associates, the amount and kind of articles to be delivered, as tribute, at fixed periods, was at once determined between "the parties."²⁹³ For the faithful performance of that contract, the vanquished stood in daily peril of their lives;²⁹⁴ and in order to watch them constantly, and to regulate the delivery and transmission of the tribute, special officers were maintained among the conquered pueblos by their conquerors. These officers were called "gatherers of the crops," *calpixqui*. Each one of the three confederates sent its own "calpixqui" among the tribes which had become its exclusive prey, and where, as sometimes occurred, one pueblo paid tribute to all three confederates, it had to submit to the residence in its midst, of as many representative gatherers of duties.²⁹⁵

"tlacochcalcatl-tecuhtli." But we know that the duties of the latter officer were quite different. Still, the collection of tribute being a branch of military life, the mistake is easily accounted for. The military chronicles of the Mexican tribe teem with instances where the stewards are described as under direct orders of the "chief of men," as in *Zurita* (pp. 68, 69, 70). It may also be inferred from the exaggerated statements about the tribute system among the Tetzucans, contained in *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXV, pp. 239-241).

²⁹³ I refer to the following passages of *Texozomoc* ("Crónica," Cap. IX, p. 16, Capture of Azcapotzalco; Cap. XV, p. 21, Cuyucan; XVII, p. 28, Xochimilco; XVIII, p. 29, Cuiclahuac; XXVI, p. 40, Chalco; XXVII, p. 41, Tepeacac and Tecamahualoo; XXIX, pp. 44 and 45, Tziccoac and Tzucpan; XXXII, p. 50, Ahuilizapan, and the Totonaca; XXXVIII, p. 52, Conyxtlahuacan; XXXVIII, p. 61, Huaxaca; Cap. LXXI, p. 102, Chlapan and Xilotepec; Cap. LXXV, p. 110, Cuextlan; Cap. LXXXII, p. 122: Teloloapan; LXXXVI, p. 130, Tecuantepec and others; LXXXIX, p. 136, Xoconuicho; LXXXIV, p. 148, Nopallun; LXXXVIII, Xaltepec; XCI, p. 159, Quetzaltepec). *Durán* (Cap. IX, p. 77; X, p. 94; XII, p. 113; XVII, p. 161; XVIII, p. 159; XIX, p. 171; XXI, p. 185; XXII, p. 191; XXIV, p. 205; XXXIV, p. 209; XLI, p. 331; XLVI, p. 373, etc.). These passages fully illustrate the manner in which the tribute was imposed on the vanquished, at the close of a successful foray. *Ixtlilxochitl* ("Histoire des Chichimèques," Cap. XXXVIII, pp. 271 to 273). *Sahagún* (Lib. VIII, cap. XXIV, p. 313): "Habiendo pacificado la provincia, luego los señores del campo repartían tributos a los que habían sido conquistados. . ."

²⁹⁴ *Durán* (Cap. LIII, p. 423). Also the complaints of the Indians of Cempohual and Quahuiztlan (Totonacanas) (on the coast, to Cortés, about the dread in which they continually stood of being overrun again by the Mexican and their confederates. (Cortés "Carta Segunda," p. 13, Vedia I), *Bernal Díaz* (Cap. XLV, p. 40; XLVI, p. 41, Vedia II), "Real Ejecutoria," etc" (Col. de Doc's II, p. 12).

²⁹⁵ This results from the "articles of agreement" of the confederacy. See besides: *Zurita* (p. 67). *Hernando Pimentel Nezahualcoyotl* ("Memorial dirigido al rey, etc." "Geografía de las Lenguas," Orozco y Berra pp. 244 and 245) also states: "The pueblos whose tributes were distributed among Mexico and Texcoco and Tacuba were the following: Conyxtlahuacan, Cuauhtueco, Cotlaxtlan, Avilcapan, Tepeaca." Against this there stands the version of *Sahagún* (Lib. XII, cap. XLI, p. 59): "Luego allí habló otro principal que se llamaba Mixcoatlailotlacauhtoctzin, dile al señor capitán, que cuando vivía Mocthecuzoma el estilo que se tenía en conquistar, era este, que iban los Mexicanos, y los Texcucanos, y los de Tlacupan, y los de las Chinampas, todos

Thus the Mexicans had a number of such officers scattered among tributary settlements. The "chief of men" controlled their actions, but his power did not extend over the "calpixca" of the tribes of Tezcuco and Tlacopan. He could not even appoint the stewards sent to dwell among the tributary foreigners,²⁹⁶ this power being vested in the council alone.²⁹⁷ Such an office was by no means a post of honor and enjoyment. On the contrary, there was no more responsible or dangerous duty within or without the tribe. The "calpixqui" while he had not the slightest authority to meddle with the affairs of the tribe where he lived,²⁹⁸ was expected to watch closely the dispositions and incli-

juntos iban sobre el pueblo ó provincia que querian conquistar, y despues que lo habian conquistado, luego se volvian á sus casas, y á sus pueblos, y despues venian los señores de los pueblos que habian sido conquistados, y traian su tributo de oro y de piedras preciosas, y de plumages ricos, y todo lo daban á Moctheuczoma, y así todo el oro venia á su poder." This plain and very natural statement, from a Tlatilulcan chief who afterwards became "gobernador" of Tlatilulco (*Sahagun*, Lib. VIII, cap. II, p. 274), has been twisted by *Torquemada* (Lib. IV, cap. CII, p. 572), so as to say among other things: "and they had the tributes gathered at Mexico, and here it was distributed among the three Lords according to the directions given by him of Mexico." *Torquemada* has, in this instance, evidently changed the text of his predecessor. There is also an undeniable confusion here between booty and tribute. The former had to be divided among the conquerors while they were yet together; the latter occurred regularly afterwards, and hence did not need to go through the hands of Mexicans again. The story of *Torquemada* is corroborated by *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXIX, p. 282), who clearly says that "Fasting Wolf" put stewards only when the tribute belonged to his tribe, but that the whole tribute was brought to Mexico and there "the agents of the three chiefs divided it among themselves. Finally, we have the obscure statements of *Ramirez de Puenzal* (pp. 214, 247, in 1er Recueil of Mr. Ternaux).

²⁹⁶ The "Calpixcayotl" was a permanent office, not a temporary duty or mission; consequently its incumbents could not be appointed by a single war-chief. There is evidence to that effect. According to *Durán* (Cap. XVIII, p. 164), after those of Tepencac had been conquered, "Cihuacohuati" placed a steward in their midst: "Mirá que en ello no aya falta ni quiebra; y para questo mejor se cumpla, os quere poner un gobernador de los señores Mexicanos, al qual aneis de obedecer y tener en lugar de la real persona, el qual se llama Coacnech, y con esto os podeis ir en norabuena á vuestras tierras y ciudades porque al rey no le podeis hablar." (Cap. XXI, pp. 186 and 187). The steward for Cuertlaxtlan was chosen by the "Snake-woman;" or at least his choice was proclaimed by that officer. (Cap. XXIII, p. 199): "Acuado el sacrificio y despedidos los gláspedes, Tlacaelel, con consejo del rey, enuló un virey á Coaxtlavac para que tuviese cargo de aquella provincia y de los tributos reales, el qual se llamava Cuauxochitl. . . ."

²⁹⁷ This results from the fact that the "Cihuacohuati" announced the newly chosen "Calpixqui." In this case he plainly acted as *foreman of the council*, proclaiming their choice.

²⁹⁸ I have already, in note 4, disposed of the statements of *Sahagun* (Lib. VIII, cap. XXIV, p. 313): "y luego elegian gobernadores y oficiales que presidiesen en aquella provincia, no de los naturales de ella, sino de los que la habian conquistado." In further explanation thereof, I beg to call attention to some statements of the interpreters of the *Codex Mendoza* (plates XX and XXI): "Los pueblos signados en los dos planos agügentes, resumidos aquí, son diez y ocho pueblos, según que están intitulados. Por

nations of those by whom he was surrounded and to report forthwith any suspicious movements or utterances that came to his notice. Thus he appeared, in the eyes of the people among whom he resided, as a spy, whose reports might, at any time, bring down upon them the wrath of their conquerors. Again, it was his duty to control the bringing in of the articles promised as tribute, at stated times. Consequently he was the hateful tax-gatherer, the living monument of their defeat with all its unfortu-

los Señores de Mexico tenían puesto un gobernador llamado Petlacalcatl, aunque en cada un pueblo tenían puesto un Calpixque, que es como Mayordomo, que tenían à cargo de hacer recoger las rentas y tributos que los dichos Señores tributaban al Señorío de México y todos los dichos mayordomos acudían al dicho Petlacalcatl, como su gobernador;" (plates XXII and XXIII): "... tenían puestos Calpixques, en cada uno de ellos, y en lo mas principal dominaba sobre todos ellos un gobernador, para que los mantubiese en paz y justicia, y les hiciese cumplir sus tributos y porque no se rebelasen;" (plates XXIV and XXV): "Y á que fuesen bien regidos y gobernados, los Señores de Mexico en cada uno de ellos tenían puestos Calpixques, y sobre todos les Calpixques un gobernador, persona principal de México, y así mismo los Calpixques eran Mexicanos, lo qual se hacia é probeya por los dichos Señores y á seguridad, para que no les rebelasen, y á que les administrasen justicia y oyesen en policia." It follows from the above that the "Governors" were placed, not so much over the tribes, as over the "calpixca" themselves, and indeed the "Petlacalcatl," "man of the house of chests," was the head-steward, to whom all the other stewards had to direct their consignments of tribute. Consequently, it is not to be understood as "governor of a province," but only "governor of the stewards," which is totally different.

Besides, there is positive evidence to the effect, that the Mexicans and their associates never interfered with the autonomy of tributary tribes. *Andrés de Tzúpla* ("Relacion," etc., p. 592): "Los que tomaba de guerra decían tequitin tlacotile, que quiere decir, tributan como esclavos. En estos ponía mayordomos y recogedores y recaudadores; y aunque los señores mandaban su gente, era debajo de la mano destos de México. . . . *Zurita* ("Rapport," etc., p. 68): "Les chefs, restant seigneurs comme avant la guerre, conservaient la jurisdiction civile et criminelle dans toute l'étendue de leurs domaines."

When the tribes of the gulf coast (the Totonacas, etc.) arose against the Mexicans, murdering the stewards who had been placed among them, they were speedily overcome again, and when they attributed their revolt to the intrigues of their head-chiefs, asking the Mexicans to punish them for it, the Mexicans replied, according to *Durán* (Cap. XXIV, p. 204): "nosotros no traemos autoridad para matar á nadie sino es en guerra: vuestros señores no han parecido en esta guerra ni los emos visto, pero no por eso se escapan, pues vuestras razones y deseo y lo que pedís, se dirá al rey nuestro señor Monteguma, y él mandará que se execute lo que nosotros dexaremos ordenarlo, y luego sin mas dilacion los traed aquí á todos ante nosotros y á muy buen recaudo." Afterwards: "enviaron á Cuauuochtil y á Tiliuacalqui, que eran de los mayores oydores del consejo supremo, para que executasen aquella justicia." The two chiefs were cruelly butchered (p. 200). This story is also related by *Tezozomoc* (Cap. XXXV, pp. 55 and 56), and it is evidently the instance referred to and illustrated by the *Codex Mendoza* (plate LXXVII). The foregoing tells us that even in a case of dangerous treachery and rebellion such as the above, the Mexicans did not claim the right to interfere in the internal affairs of the conquered tribe, of their own accord, but that it required the positive request of that tribe to cause them to act in the premises. Furthermore, the position of the "chief of men" as military executor is clearly defined: "y él mandará que se execute lo que nosotros dexaremos ordenarlo." A very important statement!

nate results. It certainly required men of capacity and experience to fill such a position, and we need not wonder, therefore, if the "calpixca," whom Cortés met among the Totonacas of the coast, wore the distinctive tokens of chiefs.²⁹⁹

The conditions of tribute were various. Some tribes delivered their contributions every eighty days, whilst others sent them in annually.³⁰⁰ In most cases, they had to be carried to Mexico-Tenuchtitlan by the tributaries, or at least, the delivery was at their charge.³⁰¹ This was done frequently by prisoners of war, made by the tributary pueblo and sent as part of the tribute itself.³⁰² The "calpixqui" superintended this intercourse, he verified the articles received, and again dispatched them, properly, to the "seat and home" of the Mexicans. All this necessitated

²⁹⁹ Bernal Díaz de Castillo (Cap. XLVI, pp. 40 and 41).

³⁰⁰ The most complete record of tributes which we possess, until now, is contained in the so-called *Códex Mendoza* (Parte Segunda, plates XIX to LVII, inclusive). A full discussion of the multifarious details thereof is impossible here. It would require an essay by itself, which, however instructive it might be, would largely exceed the limits of this paper. Of course, not all the authorities agree with them. I merely refer, in addition, to *Durán* (Cap. XXV), *Oviedo* (Lib. XXXIII, cap. LI, pp. 535, 6 and 7), *Clavigero* (Lib. VII, cap. XV), *Ixtlilxochitl* ("Hist. des Chichimèques," Cap. XXXV), the latter as well as *Torquemada* (Lib. II, cap. LIII, pp. 167 and 168) confining himself to the Tezcucans and their tributaries exclusively. See furthermore, *Zurita* (pp. 246, 247 and 248), *Ramírez de Fuenleal* (Letter, p. 251). It is also interesting to consult the statements gathered on the tribute question, from tribes subject to the Mexicans. See, on *Chalco*, *Fray Domingo de la Anunciación* (Letter dated: Chalco, 20 Sept., 1554, 2d "Recueil" of Mr. Ternaux-Compans, pp. 333 and 334); on *Matlatsinco*, *Zurita* (pp. 394-397), *Herrera* (Dec. III, lib. IV, cap. XVIII, p. 140). The latter mostly copies from *Zurita*. Finally, much information as to the details can be gathered from the "*Códex Ramírez*" (pp. 63 and 65), and especially from the traditions on the forays and dashes of the Mexicans contained in the specifically Mexican sources already quoted.

³⁰¹ *Tezozomoc* (Cap. XXVII, p. 41, Cap. XXXIII, p. 52, Cap. LXI, p. 102, etc., etc.), *Durán* (Cap. LXIX, p. 171): "Pues mirá que lo auela de llevar á México vosotros mesmos. Ellos respondieron que les placia de lo llenar allí y seruillos, . . ." (Cap. XXII, p. 191): "y que se obligasen á traello á México. . . ." (Cap. XXIV, p. 206, Cap. XXV, p. 203, etc., etc., etc.)

³⁰² *Durán* (Cap. XXV, pp. 212 and 213). Such female slaves became concubines. The various tribes exchanged also their prisoners of war, one tribe buying (exchanging for products of the soil or for manufactures) of another those prisoners which it had received as such tribute, and also presenting each other on solemn occasions with such prisoners. There are many illustrations of this to be found. Thus the markets of aboriginal Mexico also had "slaves," for sale, who were obtained in this manner. They were not numerous, and did not form a class, only an object of medicine subject to exchange and barter. *Cortés* ("*Carta Segunda*," p. 35, Vedia I) only speaks of "bonded people" standing in the markets" or "outcasts" ready to "bind" themselves—"to let." But *Bernal Díaz de Castillo* (Cap. XCII, p. 89, Vedia II), evidently describes such unfortunate people: "é traianlos atados en unas varas largas, con collares á los pescuezos porque no se les huyesen, y otros dejaban sueltos." The same author (Cap. XLVI, p. 41) mentions the demand made upon the "Totonaca's" of the coast by the Mexican "calpixca" for "twenty Indians of both sexes to pacify their Gods therewith." This is confirmed in a general way by *Cortés* ("*Carta Segunda*," p. 13, Vedia I).

assistants at his disposal — runners — who not only accompanied the convoys of tribute, but through whom a regular communication might be kept up with the Mexican tribe. On the strength of this, it has been fancied that not only a road-system analogous to that of the Romans, pervaded the entire area of actual Mexico, but that a perfect postal system was in full and successful operation. In regard to the first assumption we beg to refer to the letter of the Licentiate Salmeron, dated Mexico, 13th August, 1531, and directed to the council of the Indies:³⁰³ "I believe that all through the land roads should be opened which would be practicable both for beasts of burthen and for carts. It would greatly increase the security of our possessions. Since the Indians had no beasts of burthen, their paths were straight and narrow, and so direct that they would not deviate an inch in order to avoid climbing the most rugged mountains." Over these Indian trails, where occasionally heavy culverts of stone, filled up gaps and spanned narrow ravines,³⁰⁴ the tribute was forwarded to the pueblo of Tenuchtitlan, and the necessary runners moved swiftly, to and fro, as occasion required. But there was no regularity in this intercourse. There were no relays, and the Indian messenger relied, in order to traverse the wide belts of waste lands between tribe and tribe, upon his own endurance and upon the bag of provisions which he carried along.³⁰⁵

On solemn occasions, the convoys of tribute were not merely escorted by runners and watchmen detailed for that purpose by the "calpixqui," but that officer, himself, accompanied them and entered Mexico-Tenuchtitlan at their head.³⁰⁶ The articles were carried to the "Tecpan" and then the duties of the "chief of men" in regard to tribute in general ended. For this tribute was not due to him, but to the tribe, and it was the tribal representa-

³⁰³ "Second Recueil de Pièces sur le Mexique" (H. Ternaux-Compans, pp. 191 and 192).

³⁰⁴ The collection of Lord Kingsborough has, among others, the pictures of so-called bridges. Anyone can see at a glance that they are mere heavy culverts. Mr. H. H. Bancroft ("Native Races," Vol. IV, p. 528) figures a bridge at Huejutla, but his argument in favor of its being an aboriginal construction appears to me very unsatisfactory. The masonry covering the mound at Metlatoyuca shows, according to his own words (Id. p. 461): "there is no evidence that the arch was intentionally self-supporting."

³⁰⁵ We must always discriminate between delegates, entrusted with certain business to transact and therefore also clothed with a certain authority, and mere runners. ("Correos" — "Ycinhca titlantli" *Molina* I, p. 30, from "Icinhca" — quick and "titlantli" — he who goes on an errand, II, pp. 32 and 113). The latter are very well described by *Torquemada* (Lib. XIV, cap. I, pp. 535 and 536), although he presupposes relays at regular intervals. This was not the case, as the march of Cortés amply proves.

³⁰⁶ "Código Ramírez" (p. 63).

tives to whom it was delivered.³⁰⁷ If the gathering of tribute thus required a set of officers necessarily placed beneath the orders of the military chieftain, another set was needed for its preservation and judicious distribution. If the one consisted of stewards dwelling outside of the pueblo, the other was composed exclusively of home-stewards. Every convoy was therefore "consigned" to a proper officer, whose duty it was to receive it and then abide the directions of his superiors as to its apportionment.³⁰⁸

We have already mentioned the "Cihuacohuatl" as the officer, who was responsible to the council for the administration of the stores and the proper distribution thereof, though he had beneath him another officer, to whom this duty was really and practically assigned. Torquemada and those who have followed his school, call this subordinate "great crop-gatherer," "Hueycalpixqui,"³⁰⁹ whereas Tezozomoc and Durán apply to him the title of "man of the house of chests" "Petlacalcatl"³¹⁰ In both cases, however, he is represented as "chief steward," to whom all the others should render account. He superintended the distribution of the tribute,³¹¹ and to him the kins came for their share—perhaps the largest of all. Unfortunately, we are unable to establish the principles upon which the division took place. All that we know is, that the tribe received one portion and the kins or "calpulli" the other, and that the "man of the house of chests," under whose eyes the distribution took place, afterwards looked to those stores, in particular, which were reserved for the tribe, i. e. : for the demands of the tribal government.³¹² Therefore, the "man of the house of chests" frequently appears to be under the direct orders of the "chief of men," who could apply to him, more particularly, for such articles as were required for the exercise of tribal hospitality including gifts, and for displays of finery on particularly solemn occasions.³¹³ It is true that, as we have elsewhere shown, particular tracts of land, "tecpan-tlalli," were reserved among tributary tribes for the demands of the official

³⁰⁷ Tezozomoc (Cap. X, p. 18), *Herrera* (Dec. III, lib. IV, cap. XVII, p. 138).

³⁰⁸ Tezozomoc (Cap. XXXII, p. 51): "A los dichos pueblos fué un mayordomo para cobrar este tributo, como para todos los demas pueblos, que en Mexico havia un mayordomo, y otro en el mismo pueblo para mayor sugecion y vasallage."

³⁰⁹ Torquemada (Lib. XIV, cap. VI, pp. 544, 545), copied by Vetancurt (*Parte II*, *Trat. II*, cap. I, pp. 370 and 371), *Clavigero* (Lib. VII, cap. X, pp. 468 and 469).

³¹⁰ Also by the *Codex Mendoza* (Interpretation to plates XX, XXI, etc.).

³¹¹ See note 300, also Tezozomoc and Durán.

³¹² This is so frequently mentioned by Tezozomoc, that I forbear detailed quotations.

³¹³ Tezozomoc ("Crónica Mexicana," sundry places, too numerous to refer to).

households,³¹⁴ still, on many occasions, whether festive or in the hour of need, the crops raised thereon would not be sufficient, and thus other stores were laid up and held for prudential reasons.³¹⁵ Over these stores the "Petlacalcatl" presided. This officer was, in all probability, appointed by the council, and he was accountable in the first place to the "Cihuacohuatl," who kept a register or list of the articles received as well as of their apportionment. These rude paintings on prepared skin, or tissue, have given rise to the fable that "archives" existed at the aboriginal pueblos of Mexico, Tezcuco, and Tlacopan.³¹⁶

The stores required for worship and for the support of the "medicine-men" were, as far as the central or tribal "house of God" was concerned, also, taken from this tribute, and assigned to the "medicine-men" according to their need. But the bulk of the tribute, presumably, went to the kins, who apportioned it among their members, after reserving the necessary quota for their government and for worship. In this manner the proceeds of tribal association finally reached the individual,—not through the tribe unless he was an outcast, but through the kin,—and thus the latter again appears as the working unit of organized society, even in the vital matter of subsistence.

The procuring of subsistence, by means of warfare, is the widest field of tribal action known to aboriginal Mexico. It links together kin and tribe, and furnishes a *raison d'être* for the highest known form of tribal society—the confederacy.

After what has been said in this and the preceding essays, it is superfluous to recur, in detail, to the confederacy formed by the three "Nahuatl" tribes, of Mexico, Tezcuco and Tlacopan. Its "articles of agreement" have been stated elsewhere; and we know the prominent position, in a military point of view, occupied by the Mexican tribe in this partnership, formed, as it was, for the purpose of war and plunder. All that remains for us to emphasize is the fact, that this inter-tribal connection in the Mexican valley did not extend further than a tri-partite association for the aforesaid purposes. There was no interference on the part of the conquerors, in the affairs of the conquered, no attempt gradually

³¹⁴ "Tenure of Lands" (pp. 419 and 426).

³¹⁵ See the concurrent reports about the great drouth, while "Wrathy chief who shoots arrows heavenward" ("Montezuma Ihhuicamina") was "chief of men."

³¹⁶ This very interesting and important question will soon be fully discussed by a very competent authority. I consequently forbear entering into any examination thereof.

to cast the heterogeneous elements into one uniform mould, because there was no idea of any form of society other than that based upon kin, and of this, the tribe, characterized by independent territory, a dialect of its own and a common name and worship, formed the highest governmental expression.

We have thus, involuntarily almost, retraced our steps to the point of departure and justified, as we believe, our original propositions. We have tried to show that there was, in aboriginal Mexico, neither state, nor nation, nor political society of any kind. We have found a population separated into tribes representing dialectical variations of speech, each tribe autonomous in matters of government, and occasionally forming confederacies for purposes of self-defence and conquest. Out of that confederacy, brought so prominently forward by the events of the Spanish conquest, we have selected on account of its military pre-eminence, one tribe,—the ancient Mexicans—and we have shown that it was an organic body composed of twenty autonomous kins for purposes of mutual protection and subsistence. A social organization resting upon such a foundation must, of necessity, have been a democratic body. Indeed, we have found that each kin was governed by strictly elective officers, subject to removal at the pleasure of their constituents; that the twenty kins, for their mutual benefit, had delegated their powers to transact business with outsiders to a council of the tribe, in which every kin was represented by one member and consequently, had the same voice and vote as either one of the others. The execution of the decrees of this council was left to elective officers, whose power was limited to military command, and whom the tribe might depose at pleasure. With the exception of some very inferior positions, these officers had not the power of appointing others to office, not even their assistants of high rank. The dignity of chief, so commonly transformed into hereditary nobility, has been found to have been, merely, a reward of merit and carried with it no other prerogatives than personal consideration and occasional indulgence in finery. Taking all this together, and adding to it the results of our investigations into the military organization of the ancient Mexicans, as well as of their communal mode of holding and enjoying the soil, we feel authorized to conclude *that the social organization and mode of government of the ancient Mexicans was a military democracy, originally based upon communism in living.*

REPORT OF THE TREASURER.

REPORT OF THE TREASURER.

*To the Trustees of the Peabody Museum of American Archaeology and
Ethnology in connection with Harvard University:*

The Treasurer respectfully presents his Twelfth Annual Report in the following
abstract of accounts, and the cash account hereto annexed:—

The Collection Fund is charged with

9 Massachusetts 5 per cent. Const Defence Specie Notes, due July 1, 1883, each for \$5,000, numbered 46 to 51, registered, the gift of George Peabody, Esq.	\$45,000 00
Balance of Worcester & Nashua R. R. Co. Note of July 5, 1875, at 6 per cent.	\$7,465 28
Note of Worcester Gas Light Co., Jan. 4, 1876, at 5 per ct.	1,300 00
Note of Worcester Gas Light Co., Jan. 15, 1876, at 5 per ct.	600 00
Balance of Treasurer's Account	1,686 14
Income from Mass. 5 per cent. Notes in currency	4,512 66
Income from Treasurer's Investments	391 79
	4,904 45
Sale of Reports, \$17 95; of Box, \$2 00	19 95
	\$50,965 83

And Collection Fund is credited with

9 Mass. 5 per cent. Const Defence Specie Notes, as above.	\$45,000 00
Note of Worcester Gas Light Co., Jan. 15, 1876, at 5 per cent.	600 00
Cash in the hands of the Treasurer	5,114 61
Payments for Explorations	3,246 17
Payments for Collections	1665 14
Payments for printing Report, paper, etc.	1,710 92
Payments for Incidental Expenses	2,067 68
Payment of Salary of Curator,	1,800 00
Payment to Harvard College, for Rent of Rooms	312 50
	10,241 21
	\$50,965 83

The Professor Fund consists of

9 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 55 to 63, registered, the gift of George Peabody, Esq.; the income appropriated to Collection Fund, until Professorship is filled	\$45,000 00
--	-------------

The Building Fund is charged with

12 Massachusetts 5 per cent. Specie Notes, as above, each for \$5,000, numbered 64 to 75, registered, the gift of George Peabody, Esq.	\$60,000 00
Balance of Treasurer's Account	1,654 48
Income from Mass. 5 per cent. Specie Notes, in currency . . .	3,008 44
	<u>\$64,662 92</u>

And Building Fund is credited with

12 Mass. 5 per cent. Specie Notes, as above, each for \$5,000 . . .	\$60 000 00
Payments for the Building	3,714 32
Cash in the hands of the Treasurer	948 10
	<u>\$64,662 42</u>

The Investments now are

For Collection Fund	50,714 61
For Professor's Fund	45,000 00
For Building Fund	60,948 60
	<u>\$156,663 21</u>

STEPHEN SALISBURY, *Treasurer.*

CAMBRIDGE, January 16, 1879.

Dr.

STEPHEN SALISBURY, *Treasurer of the Peabody Museum of American Archaeology and*

1878.

For Collection Fund.

Jan. 22.	To Balance of Account		\$1,606 14
Apr. 9.	To rec'd in part of Worcester & Nashua R. R. Co. Note of July 5, 1875		1,319 67
Apr. 19.	To rec'd for Worcester Gas Light Co. Note, Jan. 4, 1876, \$1,300; Interest, \$19 50		1,319 50
July 5.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes in Gold	1,125 00	
July 5.	To rec'd on sale of \$1,125 Gold, at 9-16 per cent.	6 33	
July 5.	To rec'd 6 months' Interest on Mass. 5 per cent. Notes of Professor Fund	1,125 00	
July 5.	To rec'd on sale of \$1,125 Gold, at 9-16 per cent.	6 33	
July 2.	To rec'd 6 months' Interest on Worcester Gas Light Co. Note of \$500 00, to 1st. 5 per cent.		2,202 06
July 2.	To rec'd for Reports, \$1 50; for Box, \$2 00		15 00
Sept. 14.	To rec'd in part of Worcester & Nashua R. R. Co. Note		3 50
Oct. 3.	To rec'd of Curator, credit for payment, July 25	100 00	3,200 00
Oct. 3.	To rec'd of Museum Comparative Zoology, for Freight from California, \$15 75; Mexico, \$8 00	23 75	
Oct. 3.	To rec'd for Reports sold	8 96	
Oct. 22.	To rec'd in part of Worcester & Nashua R. R. Co. Note		132 70
Dec. 31.	To rec'd of Worcester & National Bank, Interest on Deposit		1,400 00
			27 98

Carried forward

\$11,317 13

Cr.

Ethnology in connection with Harvard University, in Annual Cash Account, Jan. 14, 1879.

1878.			
Feb.	4.	By paid Harvard Coll., Rent of Rooms, to July 1, '77	312 50
Feb.	20.	By paid H. Hills, for Ancient Missouri Pottery . . .	88 00
Feb.	25.	By paid Dr. C. C. Abbott, on acc't Explorations in New Jersey . . .	100 00
Feb.	25.	By paid Henry Gillman, on acc't Explorations in Florida . . .	100 00
Feb.	25.	By paid Edward S. Morse, on acc't Explorations in Japan . . .	250 00
Feb.	25.	By paid Dr. Edward Palmer, on acc't Explorations in Mexico . . .	500 00
Feb.	25.	By paid P. Schumacher, on acc't Explorations in California, \$500 00, Gold . . .	510 62
			1,400 62
Apr.	5.	By paid Curator, for paid Photograph of Building . .	10 00
Apr.	5.	By paid Curator, for paid 100 Electrotypes, Special Appropriation . . .	28 50
Apr.	5.	By paid Curator, for paid 1 Special Appropriation for Assistant . . .	75 00
Apr.	5.	By paid Curator, for paid Illustrations Mr. Blake's paper, Special Appropriation . . .	150 00
Apr.	5.	By paid Curator, for paid Sundry Incidentals . . .	28 32
Apr.	5.	By paid H. W. Poole, for Books and Photograph . . .	20 00
Apr.	5.	By paid Salem Press, for Paper, etc.	13 00
Apr.	5.	By paid Sawin's Express	33 02
Apr.	5.	By paid Prof. E. Hitchcock, for Casts of Indian Pots . .	10 00
Apr.	5.	By paid F. H. Markoe, for Cement	3 75
Apr.	5.	By paid E. Curtiss, for Collection from Tennessee . .	39 85
Apr.	5.	By paid J. N. Curtiss, 3 months pay as Janitor, to 1st . .	150 00
Apr.	5.	By paid Richard & Bous, Freight from Peru	53 25
Apr.	5.	By paid T. Richardson, for Coal	60 00
Apr.	5.	By paid F. W. Putnam, Curator, Salary for 3 months, . .	450 00
			1,124 69
Apr.	16.	By paid P. Schumacher, on account Explorations in California . .	200 00
Apr.	16.	By paid C. Hale, for Egyptian Mummy	50 00
Apr.	16.	By paid Curator, Appropriation Explorations in Tennessee	100 00
			850 00
Apr.	19.	By paid Dr. Earl Flint, on account of Explorations in Nicaragua . .	500 00
June	19.	By paid P. Schumacher, on account Explorations in California, Gold, \$100 00; Telegraph Transfer, \$3 75	103 75
July	2.	By paid Curator, for paid on acc't Printing Report . .	365 41
July	2.	By paid Curator, for paid A. Hardy, Exploration Shellheaps in Maine	15 00
July	2.	By paid Curator, for paid N. Vickary, for Articles from Indian Graves, Lynn	10 00
July	2.	By paid Curator, for paid Dr. C. C. Abbott, for Archaeological Collections in New Jersey	100 00
July	2.	By paid Curator, for paid E. Curtiss, for Explorations in Tennessee, June 7	38 85
July	2.	By paid Curator, for paid E. Curtiss, for Explorations in Tennessee, June 21	27 95
July	2.	By paid Curator, for paid G. W. Morse, for Pottery from Missouri	62 42
July	2.	By paid Curator, for paid for Stone Pipe	5 00
July	2.	By paid Curator, for paid for Incidentals	124 43
July	2.	By paid Curator, 1/2 of an Appropriation for Assistant . .	75 00
July	2.	By paid F. W. Putnam, one quarter's Salary, to 1st . .	450 00
July	2.	By paid J. N. Curtiss, one quarter's Pay to 1st inst. . .	150 00
			1,424 06
July	25.	By paid Dr. C. C. Abbott, on account of Explorations in New Jersey	100 00
July	25.	By paid E. Curtiss, on account of Explorations in Tennessee	200 00
July	25.	By paid Curator, on account of Incidentals	100 00
			400 00
<i>Carried forward</i>			<u>\$5,763 62</u>

Dr.

		<i>Brought forward</i>	\$11,347 15
1879.			
Jan.	4. To rec'd 6 months Interest on Worcester Gas Light Co. Note, to 1st		15 00
Jan.	6. To rec'd 6 months Interest on Mass. 5 per cent. Notes, to 1st inst., Gold	1,125 00	
Jan.	6. To rec'd 6 months Interest on Mass. 5 per cent. Notes of Professor Fund, to 1st inst., Gold	1,125 00	
		<hr/>	2,250 00
Jan.	8. To rec'd for Sale of Reports		7 50
Jan.	13. To rec'd Interest on Balance of Worcester & Nashua R. R. Co. Note of July 5, 1875	314 31	
Jan.	13. To rec'd Balance of Principal of above Note	1,545 61	
		<hr/>	1,860 92

\$15,479 57

		<i>Brought forward</i>		Cr.
				\$5,763 62
Aug. 15.	By paid E. T. Jenks, for Locks, etc.			128 00
Sept. 26.	By paid R. & C. Degener, for Freight from Vera Cruz			72 42
Oct. 3.	By paid Sawin's Express	57 00		
Oct. 3.	By paid J. W. Grant, for Paper Trays	40 00		
Oct. 3.	By paid G. D. Markoe, for Cement	1 50		
Oct. 3.	By paid J. N. D. Hart, for Collection from Wisconsin	8 00		
Oct. 3.	By paid G. W. Morse, for Pottery and Stone Imple- ments from Illinois	153 67		
Oct. 3.	By paid Salem Press, Envelopes, etc., \$8 05; Print- ing Report, \$394 68	1,003 73		
Oct. 3.	By paid J. N. Curtis, Janitor, Pay for July and Aug.	100 00		
Oct. 3.	By paid E. E. Chick, Janitor, Pay for September	50 00		
Oct. 3.	By paid Curator's Bill of Incidentals	279 26		
Oct. 3.	By paid F. W. Putnam, Curator, Salary for 3 months	450 00		
			2,142 16	
Oct. 31.	By paid Dr. Earl Flint, on account of Explorations in Nicaragua		200 00	
Nov. 15.	By paid Dr. C. C. Abbott, on account of Explora- tions in New Jersey	100 00		
Nov. 15.	By paid Edwin Curtiss, on account of Explorations in Tennessee	200 00		
			300 00	
Dec. 27.	By paid Merchants Marine Insurance Co., for Policy, \$3,000; for 5 years on Collections		45 00	
1879.				
Jan. 8.	By paid C. W. Sever, for Paper, Stationery, etc.	18 88		
Jan. 8.	By paid Richard & Boas, Freight, etc., per Acapulco	177 50		
Jan. 8.	By paid W. T. Richardson, Coal	242 60		
Jan. 8.	By paid Sawin's Express	55 89		
Jan. 8.	By paid E. E. Chick, Janitor, 3 months Salary, to 1st	150 00		
Jan. 8.	By paid Dr. C. C. Abbott, work for and at Museum	83 25		
Jan. 8.	By paid N. Vickary, for Stone Implements from South Carolina	40 00		
Jan. 8.	By paid Salem Press, for Paper, Stationery, etc.	19 25		
Jan. 8.	By paid Link & Co., Mucilage	6 00		
Jan. 8.	By paid Miss J. Smith, Salary for 3 months to 1st	75 00		
Jan. 8.	By paid Curator, for paid Custom House oaths, \$2 50; Blank Book, \$1 00	3 50		
Jan. 8.	By paid Curator, for paid Postage, \$20 89; paid E. E. Chick, Sundries, \$4 00	24 89		
Jan. 8.	By paid Curator, for paid 2 Spanish Jars, \$2 00; Specimens from Cumberland Gap, \$5 00	7 00		
Jan. 8.	By paid F. W. Putnam, Curator, Salary for 3 months, to 1st inst.	450 00		
			1,303 73	
Jan. 8.	By paid F. W. Putnam, Curator, to pay W. Clogston, for Stone Implements, etc.		400 00	
Jan. 14.	By Cash in the hands of S. Salisbury, Treasurer		5,114 61	

 \$15,479 57

For Building Fund.

1878.			
Jan.	22.	To Balance of Account	\$1,654 48
July	5.	To rec'd 6 months Interest on Mass. 5 per cent. Notes, Gold	1,500 00
July	5.	To rec'd for sale of above, \$1,500 00, Gold, at 9-16 per cent.	8 44
			<hr/> 1,508 44
1879.			
Jan.	6.	To rec'd 6 months Interest on Mass. 5 per cent. Notes, to 1st, Gold	1,500 00

\$4,662 92

Cr.

1878.

Apr. 5.	By paid W. T. Richardson, for Coal for Drying	75 00	
Apr. 5.	By paid E. T. Jenks, for Iron Brackets	575 01	
Apr. 5.	By paid Worcester Bros., for Curtains	4 68	
Apr. 5.	By paid G. G. Page, for Wooden Trays	45 00	
Apr. 5.	By paid A. Baumister, for Steam Fixtures	5 75	
Apr. 5.	By paid J. N. Curtis, for Paint and Glass	16 65	
Apr. 5.	By paid A. Chick, for Elevator Case	25 00	
			747 03
Apr. 23.	By paid Hancock & Greely, for Carpentry	931 13	
Apr. 23.	By paid W. C. Poland & Son, for Mason Work	518 91	
Apr. 23.	By paid John Mack, for Plastering	116 50	
Apr. 23.	By paid J. W. Fuller, for Bells, etc.	34 00	
Apr. 23.	John Farquhals Sons, for Slate	6 55	
			1,607 08
July 7.	By paid J. N. Curtis, for Paint and Shellac, for Cases	19 20	
July 7.	By paid G. D. Putnam & Co., for Rubber Hose	33 25	
July 7.	By paid Brock Bros., for Fire Buckets	6 00	
			58 45
Oct. 3.	By paid Worcester Bros., for Window Shades	34 00	
Oct. 3.	By paid T. Wilson, for Cases	237 87	
Oct. 3.	By paid R. Sherburne, for Glass	21 70	
Oct. 3.	By paid J. N. Curtis, for Materials for Cases	6 65	
Oct. 3.	By paid G. G. Page & Co., for Trays for Cases	30 15	
			349 87
Nov. 2.	By paid Walworth Manufacturing Co., for Repairing Leak	13 00	
Nov. 2.	By paid Leander Greely, for Bolts, etc.	24 25	
			36 25
Nov. 15.	By paid George H. Slack, Architect, for Plans for Cases		140 00
1879.			100 00
Jan. 4.	By paid Edward F. Meany, for Inscription Tablet		
Jan. 8.	By paid T. Wilson, Carpentry	370 20	
Jan. 8.	By paid Lambert Bros., Glass	130 99	
Jan. 8.	By paid J. N. Curtis, Painting and Glazing	90 50	
Jan. 8.	By paid E. T. Jenks, for Locks, etc.	43 06	
Jan. 8.	By paid Sawin's Express	11 13	
Jan. 8.	By paid Curator, for paid Lock, \$0 60; C. Moore, Butts, Coal Hod, etc., \$1 81	2 41	
Jan. 8.	By paid Curator, for paid Cleaning Windows, \$13 65; for Glass, etc., \$14 70	28 35	
			675 64
Jan. 14.	By Cash in the hands of S. Salisbury, Treasurer		246 80

\$4,863 92

I certify that I have examined this account, and find the items to correspond with the vouchers, and to be correctly computed, and that the securities are in the Treasurer's possession.

S. F. HAVEN, Auditor.

Jan. 14, 1879.



THIRTEENTH ANNUAL REPORT
OF THE TRUSTEES
OF THE
PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY,

PRESENTED TO THE PRESIDENT AND FELLOWS OF
HARVARD COLLEGE, MARCH, 1880.

VOL. II. No. 4.

CAMBRIDGE.
PRINTED BY ORDER OF THE TRUSTEES.
1880.

PRINTED AT THE SALEM PRESS,
SALEM, MASS

CONTENTS.

	PAGE.
LIST OF TRUSTEES AND OFFICERS	712
LETTER OF THE TRUSTEES TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE	713
ABSTRACT FROM THE RECORDS	714
REPORT OF THE CURATOR	715
LIST OF ADDITIONS TO THE MUSEUM AND LIBRARY DURING THE YEAR 1879	732
REPORT OF THE TREASURER	752
CASH ACCOUNT OF THE CURATOR	754
INDEX OF VOL. II	757
TITLE PAGE, PREFATORY NOTE AND CONTENTS OF VOL. II.	

PEABODY MUSEUM
OF
AMERICAN ARCHÆOLOGY AND ETHNOLOGY
IN CONNECTION WITH
HARVARD UNIVERSITY.

FOUNDED BY GEORGE PEABODY, OCTOBER 8, 1866.

TRUSTEES.

ROBERT C. WINTHROP, Boston, 1866.
CHARLES FRANCIS ADAMS, Quincy, 1866.
FRANCIS PEABODY, Salem, 1866; *deceased*, 1867.
STEPHEN SALISBURY, Worcester, 1866.
ASA GRAY, Cambridge, 1866.
JEFFRIES WYMAN, Cambridge, 1866; *deceased*, 1874.
GEORGE PEABODY RUSSELL, Salem, 1866, *resigned*, 1876.
HENRY WHEATLAND, Salem, 1867. Successor to Francis Peabody, as
President of the Essex Institute.
THOMAS T. BOUVÉ, Boston, 1874. Successor to Jeffries Wyman, as
President of the Boston Society of Natural History.
THEODORE LYMAN, Brookline, 1876. Successor to George Peabody
Russell, by election.

OFFICERS.

ROBERT C. WINTHROP, *Chairman*, 1866.
STEPHEN SALISBURY, *Treasurer*, 1866.
GEORGE PEABODY RUSSELL, *Secretary*, 1866-1873.
HENRY WHEATLAND, *Secretary*, 1873.
JEFFRIES WYMAN, *Curator of the Museum*, 1866-74.
ASA GRAY, *Curator of the Museum, pro tempore*, 1874-1875.
FREDERICK W. PUTNAM, *Curator of the Museum*, 1875.
LUCIEN CARR, *Assistant Curator of the Museum*, 1877.
MISS JENNIE SMITH, *Assistant*, 1878.
EDWARD E. CHICK, *Janitor*, 1878.

THIRTEENTH ANNUAL REPORT.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

THE Trustees of the Peabody Museum of American Archaeology and Ethnology herewith respectfully communicate to the President and Fellows of Harvard College, as their Thirteenth Annual Report, the Reports of their Curator and Treasurer for the year 1879, presented to the Board at its annual meeting on February 6, 1880.

ROBERT C. WINTHROP,
CHARLES FRANCIS ADAMS,
STEPHEN SALISBURY,
ASA GRAY,
HENRY WHEATLAND,
THOMAS T. BOUVÉ,
THEODORE LYMAN.

CAMBRIDGE,
MARCH, 1880.

(713)

ABSTRACT FROM THE RECORDS.

FRIDAY, FEBRUARY 6, 1880. The Annual Meeting of the Board of Trustees was held this day at noon in the Museum, Cambridge. Present: Messrs. WINTHROP, SALISBURY, WHEATLAND, BOUVÉ, LYMAN, and the CURATOR.

The Report of the CURATOR was read and accepted and ordered to be printed under his direction as a part of the Thirteenth Annual Report, which in accordance with his suggestion is to be bound with the Twelfth Report.

The Report of the EX-TREASURER was read and accepted and referred to the Curator for publication in the Thirteenth Annual Report.

The CURATOR submitted a report, audited by Mr. LYMAN, containing a detailed account of the expenditures, which was read and accepted and directed to be printed.

In the matter of the transfer of the funds to Harvard College, Mr. LYMAN reported that application had been made to the Supreme Court to authorize the transfer, and that the Court had sent down a rescript which decided that such transfer was not allowable under the Trust.

In consequence of the decision of the Supreme Court being adverse to the transfer of the funds to the care of the College, Mr. SALISBURY consented to hold the office of Treasurer for the ensuing year, and he was accordingly elected. Mr. LYMAN was also elected Auditor for the year ensuing.

The appropriations proposed by the Auditor were agreed to, and the Treasurer was authorized to transfer to the Curator the income of the funds for disbursement.

The meeting then adjourned; after which an examination was made of the room and gallery now ready for exhibition to the public.

HENRY WHEATLAND,

Secretary of the Board.

REPORT OF THE CURATOR.

To the Trustees of the Peabody Museum of Archaeology and Ethnology:—

GENTLEMEN:—As the publication of the last Report has been delayed by causes beyond my control, it is proposed, with your sanction, to make the present one as brief as possible, and to issue the two under one cover, with an index of the four reports that are to form our second volume. For this reason, your consideration of the special papers offered for publication will be asked at future meetings.

During the past year the work of exploration has been carried on as far as the limited means would permit and may be briefly stated to have been as follows:—

Dr. ABBOTT has continued to collect objects in New Jersey and has extended his researches to counties not included in his former explorations. The large amount of material which Dr. Abbott has brought together, during the several years he has been engaged in the archæological exploration of the state of New Jersey, will now enable the Museum to make a thorough exhibition of the Stone Age of a very important portion of the Atlantic coast, and to represent several distinct periods of the occupation of that part of our country by man,—or from the time when human implements were left in the gravel beds to that of the departure of the recent Indian tribes.

Dr. Abbott has also continued his examination of the gravel beds of the Delaware valley with special reference to their origin, and many important facts have been brought to light which will lead to a better understanding of the geological age of the gravel and the implements it contains. I may also mention that Dr. Abbott and myself spent several days in an examination of the shellheaps on the coast about Beesley's Point, and also passed a few days about the Delaware Water Gap and on Shawnee

Island, — a region once occupied by the important tribe of Indians from which the island takes its name. During these brief trips numerous objects were collected and a few important facts obtained.

Dr. FLINT has continued his explorations in Nicaragua, and has sent to the Museum a large number of vessels of pottery, many stone implements and other objects obtained from the ancient burial mounds. He has also continued his important researches in the caves, and has forwarded many additional drawings copied from the peculiar sculptures on the walls. From one cave he obtained portions of several human skeletons, including eight crania. With these were a few ornaments and implements. As very few human crania have been collected in Central America these from the cave are of particular importance. I will simply mention here, in a general way, that they are short and broad, and several show considerable frontal flattening. A large "idol" carved from a block of lava, and several small rude carvings in stone, have been received from the islands in Lake Nicaragua, where they were obtained by Dr. Flint. Some of these, he thinks, are of great antiquity. He has also obtained important evidence in relation to the antiquity of the cave-inscriptions.

The account of the discoveries by Dr. Flint and of the material he has secured for the Museum, will, as stated in the last report, form the subject of a special paper upon the preparation of which he is now engaged.

On the return of Dr. PALMER from Mexico, he assisted in assorting and cataloguing the material which he had collected from the present Indian tribes, particularly those in the state of San Luis Potosi, and also the collection of objects which he obtained from ancient ruins and burial mounds. To catalogue this collection required over 800 entries.

The articles which Dr. Palmer obtained from the Indians of Mexico illustrate the customs and arts of the tribes in a very perfect and comprehensive manner, and are of great importance in showing the methods of savage art and its connection with that of prehistoric times. Of the collection of antiquities, it can be said that it is the first we have received from Mexico of which the exact condition under which each object was found is known. The care with which the excavations were made and every associated object secured and properly labelled, gives the first clue

we have had at the Museum for the proper understanding of the different periods of prehistoric time in Mexico. Heretofore the objects received have, in general, been classed as Toltec or Aztec with a perfect disregard of the conditions under which they were obtained, and thus specimens from Mexico have, as a rule, been of comparatively little value, except in a very general way, for ethnological study.

One of the Crania obtained by Dr. Palmer in a burial place under an ancient mound, associated with a class of pottery unlike any we had before, is of particular interest from its extreme anterior and posterior artificial flattening, which has resulted in forming an exceedingly short and broad skull, in these respects far exceeding any other in the Museum. Another cranium from a cave is of a natural oval form.

The prehistoric objects obtained by Dr. Palmer in Mexico, and the Nicaraguan collection received from Dr. Flint, are now arranged in cases on the 1st northern gallery, and the importance of each collection can be readily seen.

Mr. CURTISS has continued in the regular employ of the Museum, and by his faithful and careful work has not only added a large number of specimens to the Museum, which are embraced under about 900 entries during the past year, but has made several important discoveries in relation to the different kinds of mounds. He has been also very fortunate in finding several forms of large and otherwise interesting implements of flint unlike any before known. After an exploration of several burial mounds and old village sites in Tennessee, Mr. Curtiss had the opportunity of making some very interesting and important explorations in Kansas and Missouri. He then commenced operations in Arkansas, where he is now engaged in the most extensive work he has yet undertaken. As the material, with the exception of the "surface finds," received from Mr. Curtiss, is arranged and on exhibition, I can hardly do better than refer you to the several cases in this room, the contents of which are largely the results of his work. It, however, will be of interest to you to know that while in Missouri he opened three mounds which are of the same character as the well-known chambered barrows of England. These chambered mounds are situated in the eastern part of Clay Co., Missouri, and form a large group on both sides of the Missouri River. The chambers are, in the three opened by Mr. Curtiss,

about eight feet square, and from four and a half to five feet high. Each chamber has a passage-way several feet in length by two in width, which leads from the chamber to the opening on the southern edge of the mound. The walls of the chambered passages were about two feet thick, vertical, and well made of stones evenly laid without clay or mortar of any kind. The top of one of the chambers had a covering of large flat rocks, but the others seem to have been closed over with wood. The chambers were filled with clay which had been burnt, and appeared as if it had fallen in from above. The inside walls of the chambers also showed signs of fire. Under the burnt clay, in each chamber, were found the remains of several human skeletons, all of which had been burnt to such an extent as to leave but small fragments of the bones, which were mixed with the ashes and charcoal. Mr. Curtiss thought that in one chamber he found the remains of five skeletons and in another thirteen. With the burnt bones and ashes there were a few flint implements, a shark's tooth, and minute fragments of vessels of clay. A large mound near the chambered barrows was also opened, but in this chambers were not found, and the bodies had been buried in an extended position. This mound proved remarkably rich in large flint implements, and also contained well made pottery and a peculiar "gorget" of red stone. The connection of the people who placed the ashes of their dead in the stone chambers, with those who buried their dead in the earth mounds is, of course, yet to be determined.

Besides making an examination of a large burial mound in Marion Co., Kansas, Mr. Curtiss removed several cairns near by. These seem to be the monuments of a later people than those who buried in the mound. These piles of stones, he found, were erected over bodies which had been placed on the bare rock. The skeletons under all the cairns that Mr. Curtiss removed were so much decayed that not a single cranium could be obtained. A number of objects of various kinds were found, which had been placed with the bodies. Among the most interesting of these, perhaps, are the several minute pipes made of catlinite. Under one of the piles of stones an arrow-point of obsidian was found associated with a glass bead. This single glass bead was the only object of European make discovered, but it is conclusive evidence of the comparatively recent period when at least one of this group of cairns was erected.

In relation to the explorations in Arkansas, I will here briefly remark, that so far as the present results have a bearing upon the subject, the moundbuilders of Arkansas seem to have been closely allied with those of the Cumberland valley in Tennessee, and were probably of the same people. The difference in the mode of burial is, however, very marked, as Mr. Curtiss finds that, in the mounds thus far opened, instead of the graves being made by slabs of stone, as in Tennessee, the bodies are surrounded by burnt clay. This custom he attributes to the absence of stone in the region. The examination of the Arkansas mounds has, however, not yet been sufficiently extended to prove that this method is common to all.

During the last half of the year Dr. PALMER has been engaged in an exploration of eastern Texas, as it was of importance to ascertain if any of the nations of mound-builders had occupied that region, and to obtain a knowledge of the archæology of that portion of the state. So far as Dr. Palmer's observations in the field have extended, it can be said that mounds, in the sense in which the term is used as applying to the tumuli of the Mississippi valley, do not occur in eastern Texas; neither is there any evidence of another people than the recent Indian tribes having occupied that portion of the state. Several so-called Indian-mounds were found by Dr. Palmer to be natural hills, and of the singular mounds of burnt stone he writes as follows:—

“These piles of stone are found in many places in Texas where flint is abundant, the most noted place being Georgetown. In the ploughed field at Georgetown, where I obtained the large number of flint implements sent to you, there were formerly several of these piles, which were described as similar to those at Comfort, from which I have sent you specimens. Outside of the flint regions these stone piles are not found. I have concluded that the Indians made brush fires on the limestone rock containing the masses of flint which they desired to split. The limestone becoming heated, imparted its heat to the flint and thus in time, the continued heat of the brush fire, caused the flint to split into pieces of various shapes and sizes convenient for use in the manufacture of implements. Perhaps the splitting of the flint was aided by throwing water on the rock while heated. I cannot attribute these piles of stone to any other cause than that here suggested. The fact that they are only found in the flint region and that they

contain so many pieces and flakes of flint of all sizes, when considered in connection with the amount of labor saved by such a method of procuring the flint of proper size for making implements, seems to me to warrant my conclusion that these piles of burnt stones show where and how the Indians of Texas obtained their flint."

It is to be regretted that, for want of funds, Dr. Palmer will be obliged to discontinue his investigations when so much of importance could be obtained by extending his field work into southwestern Texas and the adjoining parts of Mexico, a region of which the archæology is yet unknown.

An important exploration of a region on the Missouri River, in Dakota Territory, the archæology of which is but very little known, has been kindly undertaken by Mr. Geo. W. Sweet, who has already forwarded to the Museum the results of a few days preliminary work during the past autumn. These objects, all of which are from two mounds, in two distinct groups, lead to the expectation of very interesting results when their thorough exploration is made in the spring, as Mr. Sweet proposes. A special paper on the Dakota mounds and their contents will then be prepared.

Mr. W. H. Adams, during the last season, made an examination of a group of burial mounds on the Spoon River, in Illinois, and has kindly furnished the Museum with an account of his explorations and also with a number of interesting objects which he obtained from several of the mounds and from refuse heaps in their vicinity.

To Mr. Thomas M. Shallenberger we are also indebted for a short account, with a plan, of the mounds in the Spoon River valley.

Mr. A. Kocsis, of Tullahoma, Tenn., has made an examination of the "Old Stone Fort" at Manchester, Tennessee, and has furnished a valuable account and carefully made drawing of this anciently fortified hill. Several drawings and descriptions of this prehistoric work have been published, but they contained so many discrepancies that I directed Mr. Kocsis' attention to them and requested him to go over the ground with copies of the several plans before him. This he has kindly done, and I believe we now have as correct a description and drawing of the Fort as it is possible to obtain. This drawing is now being enlarged for exhibition in the Museum.

In this connection I may call your attention to the drawings representing the two great groups of earthworks at Newark and Marietta, as the first of a series of representations of some of the mounds and ancient works which I propose to hang upon the vacant wall space in this room.

In Ohio we have had the valued assistance of Prof. JOHN T. SHORT, who, in company with Messrs. Eugene Lane and David Dyer, opened three mounds in Delaware County. As Prof. Short has prepared a detailed account of his explorations which I propose to offer for your consideration in another connection, I will here briefly call attention to a few facts contained in his paper: One of the mounds was in the centre of an earth-circle, which is 570 feet in circumference and has an embankment 3 feet high. Inside of this embankment is a ditch 27 feet wide and 7 feet deep. At the eastern side of the enclosure there is an opening in the embankment, from which a graded way leads to a small stream known as Spruce Run. Near this opening is a small mound which did not yield any relics. The large mound in the centre is about 70 feet in diameter and is now 12 in height. Two layers of stones were found in this mound, and in the centre, at the bottom, was a large bed of ashes and burnt human bones. Around this bed of ashes were three pottery vessels which were taken out in fragments. To the south of the circle enclosing the mound is a large earth-circle 300 feet in diameter. Another mound, situated about one mile from Galena, and known as the "Phillips Mound," was very carefully explored, but nothing was discovered with the exception of two ash heaps. This mound was 165 feet in circumference and 4 feet in height.

Prof. Short also obtained from Mr. JAY DYER, who gave them to the Museum, some human bones which were found in a vault lined with oak and walnut timbers averaging 6 inches in diameter, over which a mound of stones, 75 feet in diameter and 15 feet high had been raised. It is greatly to be regretted that this mound and vault were destroyed, two years ago, without a careful examination. To Mr. Dyer we are indebted for the account which is given in full in Prof. Short's paper, and for the few remains of the skeletons which he was able to obtain.

Although we have the published accounts of the occurrence of burial mounds in western New York, most of the tumuli in that state have now been destroyed, and we know but little of their

structure and contents. It is therefore of great importance to obtain all the information possible about the few that still remain, and for this reason it is very fortunate that Dr. F. LARKIN, of Randolph, has undertaken to make all the researches he can in behalf of the Museum. During the past season Dr. Larkin has forwarded to the Museum several objects taken from a mound that was nearly obliterated a number of years ago, and has given an interesting account of his exploration of another mound which contained a bed of ashes and burnt bones. He has also presented a number of flint implements and a stone celt which were found under the roots of a very large tree stump, and formed part of a deposit of over 200 implements. The interesting account by Dr. Larkin will be offered to you for publication in connection with the guide-book to this room which I am now preparing, and in which I propose to give a summary of the reports of each person to whom we are indebted for the objects on exhibition.

For about two years Mr. J. FRANCIS LE BARON, Chief Engineer of the St. John's and Indian Rivers R. R., at Titusville, Florida, has been engaged in making a reconnoissance of the archæological remains in eastern Florida for the Museum. During this period he has located on a copy of a government map of Florida, published by the War Department, no less than 173 stations, comprising shellheaps, burial-mounds and fortifications, in a region extending about 300 miles south of the mouth of the St. John's, and inland along that river and over-land to Lake Okeechobee. The majority of the stations are, however, on the St. John's and Indian Rivers. Taken in connection with Prof. Wyman's account of the shellheaps of the St. John's River, the map and accompanying report by Mr. Le Baron form a valuable addition to our knowledge of the position and number of the prehistoric sites in Florida. Mr. Le Baron has also in his report called attention to several groups of tumuli of special interest which should be explored in detail if funds can be obtained for the purpose, for they are of a different character from the ordinary shellheaps and burial-mounds along the St. John's and the coast. The Report and Map by Mr. Le Baron will prove of considerable interest and importance in connection with the arrangement of the large amount of material which we have from the shellheaps of Florida, consisting principally of the collections made by the late Prof. Wyman, and the proper time for its publication will be when the

collections in that department of the Museum shall be placed on exhibition.

During the past year 3343 entries have been made in the catalogue, embracing several thousand specimens received from many different sources. As all of these are briefly noticed in the "List of Additions to the Museum," I shall here only call attention to a few important accessions, without slighting those from the many friends of the Museum who have so materially aided it by their valuable gifts.

To Mr. FRANCIS P. KNIGHT, now of Shanghai, the Museum is indebted for an interesting series of clay figures from Tientsin, which illustrate the various costumes and customs of different classes of the Chinese. This is the first of a series of shipments which Mr. Knight contemplates sending to the Museum in carrying out his wish to represent the Ethnology of portions of China.

During Prof. MORSE's residence in Japan he obtained for the Museum a series of articles representing, to a certain extent, the customs and arts of the Japanese and Ainos, with special reference to the older kinds of pottery, some of the specimens dating back to between one and two thousand years.

Among the more important purchases, during the past year, should be mentioned: The WELLS Egyptian Collection, which contains two tablets from Thebes; several sculptures from Karnak; a few bronzes, and six beautiful alabaster vases of large size from the tombs at Sakkara, in addition to a number of small objects of various kinds. This collection was made by the late J. H. WELLS during his visit to Egypt in 1856. During the year we have also received from Mrs. PICKERING the small collection made in Egypt, India, and on the east coast of Africa, by the late Dr. CHARLES PICKERING when in those countries in 1843-4.

The several small Egyptian collections have recently been brought together and are now exhibited in two cases on the eastern gallery, forming a collection of considerable importance for the purpose of comparison with objects from other countries. The principal contributors to this department, in addition to the two collections mentioned above, are Mr. CLARENCE B. MOORE, whose gift was mentioned in the last report, the late Hon. CHARLES SUMNER, the Hon. ROBERT C. WINTHROP, Lt. Com. J. R. MCNAIR, U. S. N., and J. A. LOWELL, Esq. To Mr. LOWELL the Museum is indebted for the large tablet of the time of Rameses

the second. This was brought from Egypt by the late **JOHN LOWELL, jr.**, the founder of the Lowell Lectures, and has recently been mounted on the gallery of the hall adjoining the Egyptian collection in the cases. In this hall-gallery there have been hung a number of large photographs illustrating the early architecture and temples of India, for comparison with the architecture of Central America, which is well represented by the beautiful series of large photographs now hung on the adjoining walls.

Another important addition, received by purchase, is the **BRANTZ MAYER** collection of Mexican and Peruvian antiquities.

The Mexican antiquities are now on exhibition for the first time, in the northern gallery, and consist principally of the **CUSHING, MAYER** and **PALMER** collections, which taken together form a very interesting and instructive department of the Museum.

An important and, considering the region where it was made, large collection of stone implements has been secured by the purchase of the **OSER** collection. This was made in various parts of Essex County, Massachusetts, principally about Beverly and Salem, and contains a number of interesting specimens from a region where stone implements are now seldom found.

In connection with the purchase of the collections I have mentioned, I wish to call your attention to two now on deposit, subject to purchase by the Museum. They are both important and would prove valuable additions. One of these consists of a series of several hundred objects obtained principally in the Ohio valley, many of which were taken from mounds. It also contains a number of specimens from a mound in Virginia. The collection is offered at a fair rate and I have no hesitation in advising its purchase if the funds will permit.

The other collection is a large one from Peru and is now temporarily arranged in three large cases in the gallery. This was made by the late Mr. **BUCKLIN** and contains many objects which would greatly supplement our already large Peruvian collection. There are an unusual number of ornaments and objects made of silver and bronze, while the objects of pottery would add several hundred vessels with very little duplication. As important as this collection would prove, the demand on the funds of the Museum for its purchase would prevent all active work for a year to come, and therefore I cannot urge it upon your consideration, unless there is hope of pecuniary assistance from some friend of the Museum.

The additions to the Library consist of 125 volumes and 162 serials and pamphlets. These are all recorded in other pages, but I wish particularly to call your attention to the bequest of the late Dr. PICKERING to the Library of the University, by the terms of which the Museum has received several important works, among them a copy, in perfect condition, of the well known but rare and expensive folio by Dr. Morton on American Crania.

As is shown by the present condition of the several rooms in the building, the active work in the Museum has been successfully carried on during the past year. In the upper northern room are now placed the general collection of crania and other portions of the human skeleton. In the old table cases in this room and adjoining hall, there are numerous objects from the Pacific Islands, and from the present Indian tribes of North America. In the hall are several tin cases containing garments, feather work and such other articles as would soon be injured by moths if placed in ordinary cases; and until the new cases are built in the rooms in which these objects will find their proper place, it will not be advisable to attempt their exhibition. In the other upper room, the European collections are arranged in drawers so that they can be seen and studied by persons particularly interested; but they are not on exhibition to the public, and cannot be so placed until the cases are built in the gallery of the lowest southern room, which will be during the present year. These consist of the Clement, Mortillet, Agassiz and other collections from the Swiss lakes, the Nicolucci-Lyman collection from Italy, the Rose and Claus collections from Denmark, the Moore collection from Europe and various small lots. In this room, also, are the collections from the shell-heaps of New England, all of which are arranged in trays, though a large portion of these objects have not yet been entered in the catalogue. I may, here, state that this is the only part of the Museum removed from the old rooms which has not been catalogued, and this I trust will be accomplished within a few months.

On the 2d northern gallery there are now stored in trays and on the shelves, the collections from Alaska, California and other parts of the Pacific coast. Here, too, are specimens of pottery and a number of articles pertaining to the present Indian tribes, and a small Eskimo collection. The opposite gallery now contains the general collection from the Pacific Islands, and small African and Asiatic collections; but these will soon be removed to the northern

gallery for storage until the cases are ready on the southern gallery, when they will find their proper resting place.

The southern room on the 2d floor is now in the hands of the carpenter, and, as soon as the cases are completed, the South American collection will be removed to it, and the space now occupied by the latter in the northern room, on the same floor, will be devoted temporarily to the Alaskan, Californian and present Indian collections.

The drawers under the cases in the northern room on the 2d floor are now used for a number of South American objects which have never been exhibited, and the large Wyman and other collections from the shellheaps of Florida.

The gallery of the lower southern room is now occupied by the Palmer collection from the present Indians of Mexico, and the pottery from the Swiss lakes and from Etruria, but these will all be removed during the present year in order to have the cases put up. The many objects from the surface in various parts of North America, and from the graves of recent Indians, have all been placed in several hundred wooden trays, and although they are not on exhibition they are easily accessible, as they are arranged geographically under the exhibition cases, with the exception of the Abbott collection from New Jersey, which is now in process of classification in the upper southern room. In the southern room on the 1st floor is the library. It is also the general work room of the Museum, in which the specimens are received for cataloguing and arrangement.

The northern room on the first floor, the one in which you are now assembled, with gallery and adjoining hall-gallery, is now, with your sanction, ready to be declared open to the public. For although it will yet take sometime to complete the general labelling of the cases, by substituting printed labels for the written ones, its present condition will enable the visitor to obtain nearly all the information possible regarding the contents of the cases, until the guide book relating to the room is prepared. Pending the preparation of this essential aid to the visitor I may here state, that all the objects in this room relate to the several nations of mound-builders, to the cliff-dwellers, and to the ancient and modern pueblo-tribes.

The present Pueblo Nations are represented by three models of the towns of Acoma, Tegua and Taos in New Mexico and Arizona,

and by a small collection of vessels illustrating their pottery from New Mexico. The ancient Pueblo Nations are also represented by several models and plans of ruined towns, and by fragments of pottery and other objects found in their vicinity. In the same manner a series of beautiful models, with a number of objects taken from the ruins, represent the cliff-dwellers of the Colorado region. The models shown in this connection comprise a full series of the important and instructive representations of the ruins and present towns, made under the direction of Dr. Hayden by Messrs. Jackson, Holmes and Hoffman. The ancient pueblo people are still further represented, at the period of their occupation of Southern Utah, by the important collections made by Drs. Palmer and Parry from the mounds, and ruins of adobe houses, found by those gentlemen in that region. There is also a small collection of objects obtained from a cave in Southern Utah, which are classified as pertaining to the same people.

In an adjoining case are placed the several collections of objects found in caves in Tennessee, Kentucky and Ohio, which, by their resemblance to articles from burial mounds in those States, are believed to have been the work of the same tribes, or nations, who buried their dead in the mounds and stone-graves of the Southern and Western States. Objects from the "rock shelters," or small caves, which by their character and association seem likely to have been deposited in those places by the recent Indian tribes are excluded from this room, as are *all articles* found on the surface, the purpose being to show in the rest of the cases in this room *only* such objects as are *known* to have been taken from mounds, and from the peculiar stone-graves of the Southern States. The contents of the latter are classed as belonging to the Southern Moundbuilders, from the fact that the careful exploration of thousands of these graves under the direction of the Museum, shows that their contents, including the human remains, are of the same character as those of the burial mounds, in general, in the same region. Thus, while the separate collections from the mounds in different portions of the country indicate that the so-called Moundbuilders were possessed of characteristics which show that several tribes, nations, or peoples, had the custom of mound building, we have conclusive evidence, in the objects here arranged, that the stone-grave people of the Southwest and at least one group

of the mound-builders were one and the same people. The cases in the western and southwestern portions of the room contain the objects from the pueblos and the caves. The other cases are devoted to the proper classification and display of the objects from the mounds and stone-graves, including a series of human crania, selected from among 300, to illustrate the cranial characteristics of the Southwestern Moundbuilders.

In these cases, with the exception of the general collection of pottery from the Missouri mounds, which is arranged for the purpose of showing the different groups, as illustrated by shape, design and ornament, and with the further exception of the large collection of articles from the stone-graves of the Cumberland Valley, the objects from each mound are arranged together. In this way, by the association of objects belonging to each mound, the opportunity is given the visitor of forming his own views as to the connection of the people who fashioned the articles before him, with the makers of those obtained from any other mound, or set of graves in the room; and while he can, if he choose, adopt the classification which is given in the cases, he is not forced so to do by the absence of any facts which might in his estimation point to a different conclusion, as would be the case were the objects themselves classified regardless of their association.

For the purpose of showing the connection of objects found buried with the dead, with those found in ash heaps under the large mounds, and those found in the refuse of the houses of the people, all the articles obtained from the exploration of the enclosed town of the moundbuilders near Lebanon, Tennessee, are arranged in one case, in which is also placed a carefully prepared plan of the town. The study of this one case will probably give convincing proof to most visitors that the stone-grave people, in this instance, were certainly those who made the large mound and the earth embankment and ditch enclosing it and their town.

It need only be further stated here, that the numerous specimens represented in these cases pertaining to the mound-builders were obtained from mounds in Western New York, Ohio, Virginia, Michigan, Wisconsin, Indiana, Illinois, Kentucky, Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Missouri, Iowa, Kansas and Dakota Territory.

On the gallery, as already stated, three wall cases are temporarily

devoted to the Bucklin Peruvian Collection, and two in the south-eastern corner to the Egyptian collection. The other cases contain the following: The western railing case has a small lot of stone implements and pottery from the West Indies. On the right and left of this group, the railing case, which extends around the gallery, is filled with different lots of articles from Mexico and Central America. The rest of the Mexican collection, consisting of a number of carved stones of various sizes, such as are usually designated "Mexican Idols" and the larger specimens of pottery, is arranged in the two wall cases in the north-eastern corner. To the left of these is a case containing the pottery from Honduras, a small collection of various objects from Chiriqui, and the pottery from Nicaragua which has the ornamentation made by incised lines. The next wall case contains the highly colored and ornamented tripods from Nicaragua, the several large and ornamented vases and covered dishes, and, in the bottom, a number of carved stones on which corn was ground. The next case, in the corner, contains a number of crania and other objects from the caves in Nicaragua, a few things from a shellheap, and several rude carvings in stone, from the Island of Zapatera in Lake Nicaragua. The long case on the western side of the gallery is filled with pottery, and a few human bones, from burial mounds in Nicaragua, principally from islands in the lake, the lowest portion being devoted to a series of the singular burial jars, the largest of which is in the hall-gallery. Outside the door, in the hall, is a larger "idol," cut out of hard lava from the Island of Zapatera. The principal portion of this large Nicaraguan collection was obtained from the explorations of Dr. Flint, which I have already mentioned.

The large Egyptian tablet in the hall-gallery has already been mentioned. The two cases near it in the hall contain objects from Greece, Rome, etc., for which there is as yet no more appropriate place in the Museum. The large photographs of Indian and Central American architecture have already been mentioned.

By the European trip of the Assistant Curator, Mr. CARR, the Museum has been brought into direct communication with several of the leading archæologists and Ethnologists abroad, which, already has resulted in mutual advantage. While in England, Mr. Carr received from Mr. John Evans a number of typical and otherwise

instructive specimens of stone implements, principally from England and Ireland, which Mr. Evans very liberally presented to the Museum. Mr. Carr also passed a number of days with the active workers in craniology in France and England and has become thoroughly acquainted with their methods of measurements and arrangement, so that it will now be possible to compare measurements and observations made at the Museum with those made by the French and English craniologists, which, from the several different methods heretofore used and not fully understood, has been impossible. During the present year it is Mr. Carr's purpose to continue the study of the crania, for which he is now well-prepared by the possession of instruments and apparatus designed and used by the French and English craniologists, and by a knowledge of their methods of work.

In this connection, I take pleasure in acknowledging in behalf of the Museum the generous manner in which Professors FLOWER and BUSK, of London, and Doctors BROCA and TOPINARD, of Paris, not only assisted Mr. Carr in his studies abroad, but have also furnished the Museum with instruments and publications relating to the methods of measuring crania employed by them. It is gratifying to know that, after a careful examination of many of the collections abroad, Mr. Carr returns well satisfied with our own as a basis for the study of anthropology.

Miss SMITH has continued in the position of Museum Assistant during the year, and her faithful and efficient services have enabled me to perfect the general assortment and arrangement of the several departments as already briefly sketched.

Mr. CHICK, as Janitor of the building, has also helped in many ways in Museum work, and has, by his assistance in the building of the cases and in the superintendence of portions of the work, rendered me material aid.

To Mr. WILSON the building of all the cases in the rooms has been entrusted, and it will be noticed that several changes have been made in the cases upon which he is now engaged. As it is my object to be guided by the experience obtained as this important work goes on, slight changes will be the natural result in each room that is cased, and I hope in every instance they will be improvements.

Thanking you for the extreme courtesy with which my suggest-

ions relating to the operations of the Museum have always been received, and for the liberal manner in which you have permitted their execution, I respectfully submit this thirteenth report of the Curator, the sixth which I have had the honor to present in that capacity.

F. W. PUTNAM,

Curator, Peabody Museum.

CAMBRIDGE, Feb. 6, 1890.

ADDITIONS TO THE MUSEUM AND LIBRARY FOR
THE YEAR 1879.

Additions to the Museum.

17206—17221. Stone drills, arrowheads and spearpoints, and rude implements and knives of stone from Benning's Bridge near Washington City, D. C.—Collected and presented by Mr. ELMER R. REYNOLDS, Washington City.

17222—17331. Arrowheads, spearpoints, knives, drills, celts, disks, spindlewhorls, hammers and other implements of stone; beads, spoons, pins and "totems" of shell; ornaments of copper and mica; slickstones of coal and stone; twenty-five human crania and other human bones, some of them showing marks of fire; beads, disks and a small human figure of terra cotta; and a series of fifteen earthen pots, jars, bottles and dishes from stone graves on Marshall's farm, eight miles from Nashville, Tenn., and from similar graves within the earthen embankment or "intrenched village" on Rutherford's farm in Sumner County, Tenn.; stone celt, knives and spearpoints and grooved earthen beads from the surface in the same county; also a flint dagger, collected by Mr. SHANNON, from the same place.—Exploration of Mr. E. CURTISS conducted for the Museum.

17332—17335. A perforated, triangular ornament of polished stone, probably from the United States, and a modern Indian pipe of catlinite; a necklace from the Hawaiian Islands, and two pieces of leather stamped with hieroglyphics from Egyptian mummy cases.—Collected and presented by Dr. S. KNEELAND, Boston.

17336. Cast of a shell "totem."—Presented by Dr. F. F. HILDER, St. Louis.

17337—17344. A stone pipe with brass band, knife, arrowpoints, and disks of brass, and several copper beads from a grave at Revere, Mass.; also an earthen pipe from near the same grave.—Collected and presented by the Rev. L. K. WASHBURN, Revere.

17345. Buckskin leggings from the Northwest Coast.—Presented by Mr. A. H. EDMANDS, Somerville, Mass.

17346. An earthen whistling-jar from Ancon, Peru.—By PURCHASE.

17347. Fragments of painted pottery from Mancos Cañon, Colorado.—Collected and presented by Mr. WM. F. MORGAN, New York.

17348. Human bones from a cave on Mr. Joseph Kayser's farm, four-

teen miles north of Luray, Va.—Collected and presented by Mr. W. S. BIGGLOW, Boston.

17349. A large stone spearpoint from North Carolina.—Collected and presented by Prof. W. C. KERR, Raleigh.

17350 — 18160. This magnificent collection, covering eight hundred and ten distinct entries in the catalogue and numbering over fifteen hundred specimens, is chiefly of importance in an ethnographical point of view, though it is by no means wanting in articles possessed of archæological interest. As an illustration of the condition of the Mexican Indians of to-day, their mode of life, food, manufactures, etc., it is singularly complete, inasmuch as it not only contains the perfect specimens of native handiwork, but also, in many cases, the raw materials out of which they were made and the tools used in their manufacture. Especially is this true in the matter of pottery, and of the various articles (whether used as food, medicine, or in the domestic arts) made from the yucca, agave, cactus, Indian corn and other vegetable substances. It may give some idea of the size and range of this collection to say that in articles of modern pottery alone, it numbers over five hundred specimens which were collected among the Indians of different localities in Jalisco, Mexico, San Luis Potosi, Zacatecas, Tamaulipas, Aguas Calientes, Guanajuato and other states of the Mexican confederation. In it, may be found water-jars, bottles and pitchers; mugs, cups, saucers, and ladles; cooking-pots, pans, griddles and dishes of various kinds and sizes; candlesticks, spindle-whorls, disks, balls, musical instruments, beads and a quantity of toys; in a word a large and varied assortment of all the articles of native manufacture in earthen-ware, that are found in an Indian village of to-day, and are in use either as ornaments, musical instruments, in the domestic arts, or are made for children as playthings. With these are samples of the clay in different stages of preparation, with the moulds, dies, paints, polishing stones, and scrapers of wood, bone and corn-cob, so that it is possible to follow the native potter through all the various processes of manufacture from the crude clay to the perfect vase. In a collection of this size, and after so many years of contact with the whites, there is of course more or less difference in the forms of the articles, not less than in the methods of manufacture and styles of ornamentation. Some were thrown upon the wheel, are glazed and ornamented in colors that have been burned in with the glaze, and are creditable imitations of European pottery, of which in form and shape they are copies. In others, again, the workman has evidently adhered to the aboriginal methods of manufacture¹ and retained the ancient forms. Of these latter some are plain whilst others are ornamented in colors. Sometimes these colors are produced by the use of different colored paints, and in other instances this difference is due to the different degrees of polish put upon different portions of the vessel. This style of ornamentation is used effectively, in representing vines, leaves, etc., and

¹ See 12th Annual Report Peabody Museum, p. 521.

may be said to resemble, somewhat, charcoal drawing, inasmuch as it is only possible to produce, by this process, different shades of the same color, which, in this case, happens to be red. Among the numerous toys, there is of course a great variety of form and color, as might be expected, when it is remembered that nearly all the articles made, whether for use or ornament, are copied in miniature for the children. If to this be added the attempts, more or less successful, to represent human, animal and vegetable forms, and to illustrate the modes of dress, the different pursuits, and the manners and customs of the natives it will be seen that quite an extensive field is open to the artist for the display of his plastic and pictorial talent. The collection of articles made from vegetable and animal substances is also complete, though of course they are neither so numerous nor in such great variety. In it there are specimens of cloth, blankets, etc., of wool; bottles of pig-skin, or rather an entire skin used as a vessel; dishes, spoons, musical instruments, and bows and wooden pointed arrows of wood; cups, bottles and spoons of gourd; nets, fans, mats, baskets, rope, twine, thread, brushes, bags, brooms, paper, etc., made from rushes, canes, palm leaf, agave and yucca; medicines, distilled liquors, and various articles of fruit and other vegetable food, raw and prepared, with the loom, earthen-still, and mortars, pestles, metate, grinding and other implements of stone, used in their manufacture.

Among the articles possessing a distinctive archæological interest and of which the antiquity cannot be doubted, there are earthen jars, vases, dishes, cups, spoons, tubes, pipes, spindlewhorls, and numerous fragments of pottery, painted, plain and polished, in human and animal forms; beads, arrowheads, axes and polishing implements of stone; obsidian cores, flakes, knives and arrowheads, and worked shells, from ruins at Tezcuco and Teotihuacan; human crania and other bones from the ruins at the Hacienda de La Quemada in Zacatecas, from a cave at the Hacienda Custodia, near San Luis Potosí, and from a mound near Savanito in the same state; mortars, knives, celts, disks, plates, arrowheads, grinding and polishing implements, and lip ornament, all of stone; nose ornament of bone, obsidian flakes and cores, shells, a copper axe, earthen bowls, jars and vessels of different sizes and shapes, ornaments for the lip, and rattles worn on the ankle, pipes and many fragments of different kinds of pottery ornamented in various styles, from mounds at Angostura and Savanito in the state of San Luis Potosí. There is also a collection of pestles, hammers, axes, arrowheads, mortars, knives, skindresser, scrapers, polishing stones, and a fragment of pipe, all of stone; obsidian arrowpoints, core and flakes; human heads and figures carved in stone, one of them collected by Mr. F. DeGrasse; earthen stamps, moulds, knobs, rosettes, spindlewhorls, and a large assortment of fragments of pottery, in human and animal forms, probably ornaments of vases, from a ploughed field near the pyramids of Teotihuacan, from a similar field near San Luis Potosí, and from the city of Mexico, which are probably prehistoric; at all events they are of the same general form and style, and made of the same materials as the articles from the same neighborhoods whose

antiquity is undoubted.—Explorations of Dr. EDWARD PALMER conducted for the Museum.

18161—18175. Metate and grinding stone, obsidian core, stone celt, polishing stone, and ten ornaments of stone, some of them perforated and all very highly polished, from Terra Caliente, south of the city of Mexico.—Presented by Senor Don ANTONIO ESPINOSA Y CERVANTES, Mexico.

18176—18181. Stone pestle, celt, gouges and a double pointed implement of unknown use from Bradford, N. H.—Collected and presented by Mr. GEO. HART.

18182—18204. Celts, knives, disks, chungke stones, incised tablet, hammers, a perforated stone, and six barrel-shaped stones of different sizes, from Sequatchie, Rhea, Knox and Meigs Counties, Tennessee.—By PURCHASE.

18205—18207. Three human crania from Madisonville, Ohio.—Collected by Dr. CHARLES L. METZ, and presented by the MADISONVILLE LITERARY AND SCIENTIFIC SOCIETY.

18208—18218. Celts, axes, chisel and other stone implements, and a bamboo basket and sieve, from different islands of the West Indies; stone implement from St. George, Granada—Collected by Messrs. A. AGASSIZ, S. W. GARMAN, J. B. PROUDFOOT, and WM. STEDMAN, and presented by Mr. ALEXANDER AGASSIZ, Cambridge.

18219. Arrowhead from Richmond, Ky.—Collected and presented by Mr. S. W. GARMAN, Cambridge.

18220—18224. Earthen pot with four handles, and fragments of cord marked, incised and punched pottery from Madisonville, Ohio.—Collected and presented by Dr. CHARLES L. METZ, Madisonville.

18225. Indian cranium from Swampscott, Mass.—Presented by Dr. HENRY COLMAN, Swampscott.

18226—18237. Human femur, stone tube, and fragment of human cranium marked with five incised lines, from a mound on Mr. Lansing's place at Bluffton, Volusia Bar, Florida; fragments of pottery stamped and cord-marked, stone arrowheads, knives and rude implements of stone, from Volusia Bar; and shell chisels from Kelly's Grove, seventeen miles from the Bar—Collected by Mr. CLARENCE B. MOORE and Mr. C. E. ROPES, and presented by Mr. C. B. MOORE, Philadelphia.

18238—18544. Earthen pots and jars, etc., forty-four in number, with beads, disks and a small human figure of the same material; thirty-five human crania and a large and varied assortment of implements and ornaments of copper, shell and stone, some of the latter of unique forms and unknown use, from stone graves in Davidson and Stuart Counties, Tenn.; also stone implements and ornaments of the usual patterns found south of the Ohio River, from the surface in the same counties. In this connection it is proper to say that the thanks of the Museum are due to Mrs. HAYES, Judge COOPER, and Messrs. MARSHALL and WILLIAMS of Davidson County, to Miss MATTIE STALL, Messrs. BANNISTER, A. J. STALL, J. C. GREEN, CHAS. M. GREEN, CROCKETT, and Dr. WEST of Stuart County, and to Mr. F. S. GLASS of Franklin, Tenn., for their kindness in permitting Mr.

Curtiss to make explorations on their estates, and also for valuable assistance rendered in the work, and for numerous specimens presented to the Museum.—Explorations of Mr. E. CURTISS conducted for the Museum.

18545 — 18549. Four stone celts, one polished, and a flint point, from Dover, Tenn.—Collected and presented by Mr. JAMES RICK, of that place.

18550 — 18551. Flint points from Dover, Tenn.—Collected and presented by Dr. SMITH.

18552. Iron tomahawk from the surface on Mr. Stall's farm near Dover, Tenn.—Collected and presented by Mr. STALL.

18553 — 18554. Shell bead from a mound on Amelia Island, Florida, and a flint arrowhead of unknown origin, probably Florida.—Presented by Mr. S. H. SCUDDER, Cambridge.

18555 — 18692. Earthen jars and dishes, pipes and burnt clay, human crania, shell beads and "totems," and stone celts, hammers, daggers, knives, arrowheads, spearpoints, etc., from stone graves on Jones' Creek, Tenn., a tributary of Harpeth River; and a collection of stone implements and ornaments from Sequatchie valley, Long Island near Bridgeport, Manchester, and from different localities in Dickson, Cheatham, and Davidson Counties; earthen beads, disks and ornaments, and a ring with two perforations, also of pottery, from Long Island, near Bridgeport, all of Tennessee. The thanks of the Museum are tendered to the following gentlemen for services rendered to the exploring party and for specimens kindly presented to the Museum: MESSRS. ANDERSON and HODGE of Jones Creek, and Messrs. W. GOWER and DOZIER of Davidson County, upon whose plantations the excavations were made, and to Messrs. R. S. LASATER, J. JONES, R. T. HUNT, J. R. JOHNSON, R. J. STRINGFELLOW, RAY, and THOMAS for donations.—Explorations of Mr. E. CURTISS conducted for the Museum.

18693 — 18694. Model of the Cahokia Mound, situated in Madison Co., Illinois, opposite St. Louis, and a model of the same restored, by Dr. J. J. R. PATRICK, Belleville, Ill.—Presented by Dr. PATRICK.

18695. Grooved hammerstone from an ancient pueblo north of Santa Fé, New Mexico. Collected and presented by Mr. H. W. HENSHAW, Washington, D. C.

18696 — 18699. Colored porcupine quills in a bladder case, Navajo arrow with stone point, and arrows with iron and stone points from Corn Creek, Utah.—Collected and presented by Dr. H. C. YARROW, Washington, D. C.

18700. Stone mortar from New Jersey.—By PURCHASE.

18701 — 18855. Human hair, earthen "idol," whistling jar and three water-bottles of pottery, one in human, one in animal form, and one ornamented with shells, from a huaca near Truxillo, Peru; two dishes of black pottery, four polishing stones, and two stones with human faces carved on them from Tezcuco, Mexico; earthen jars, dishes and tripods from the Island of Sacrificios, Mexico; arrowheads, spearpoints, ornaments, cores and flakes of obsidian; human and animal figures carved in stone; polishing stones; dish made of lava; shell ornaments and earthen

vases, tripods, cups, censers, tablets, pipes, whistles, rattles, rosettes, stamps, spindlewhorls and the moulds in which they were made, and numerous fragments of pottery, plain and painted, some in human and others in animal shape, probably the ornaments of earthen vessels, all from the city of Mexico.—Collected by Col. BRANTZ MAYKE and received by PURCHASE.

18856—18871. Spear with four rows of shark's teeth from the South Sea Islands; head ornament of porcupine quills, a bag made of bark, bracelet of whalebone and glass beads, ornament for the head of porcupine quills, and ten necklaces of teeth and glass beads, feathers, pods and seeds of different plants, from Venezuela.—By PURCHASE.

18872—18981. Fragments of a skull, and of plain, stamped, incised, punched, and cord-marked pottery from a burial mound in Florida; Indian cranium, and stone sinkers, gouges, axes, celts, pestles, knives, arrowheads and spearpoints of the patterns usually found in New England, from different localities in Essex County, Mass.—The OBER Collection, by PURCHASE.

18982—18988. Portion of a steatite pot, with fragments of the original ledge, and nineteen of the rude chisels used in quarrying, from Johnston, near Providence, R. I.—Collected by Mr. H. N. ANGELL, and presented by Prof. J. W. P. JENKS of Providence.

18989—18993. Two Etruscan Sarcophagi collected by the Rev. THOMAS HALL of Leghorn, Italy; fragments of tiles from a station on Green Bay, Labrador, now uninhabited, collected by Dr. H. N. STORER of Boston; an Arabic counting table and portion of a bronze hookah.—Presented by the MASSACHUSETTS HISTORICAL SOCIETY, Boston.

18994. Stone arrowhead from Williamsburg, Mass.—Collected and presented by Mr. O. H. EVERETT.

18995.—Copper beads, with string, from the Parker Mound near Elmore, Ill.—Collected and presented by Mr. W. H. ADAMS.

18996—19017. Stone drills, knives, arrowheads and spearpoints, and fragments of pottery, from about the Delaware Water Gap.—Collected and presented by Mr. L. W. BRODHEAD.

19018. Stone point from the Delaware Water Gap—Collected and presented by Mr. GRAVES.

19019. Skull of an Indian, an Ogalalla Sioux.—Collected by Brevet Col. COPPINGER, U. S. A. and presented by Mr. ALEXANDER AGASSIZ.

19020. Cast of a pipe from a mound at Lebanon, Ky.—Presented by the SMITHSONIAN INSTITUTION.

19021—19425. A collection of about 5500 articles, consisting in part of 74 grooved stone axes, 16 celts, 8 "palæolithics," and a large variety of mortars and pestles, hammers and polishing stones, sinkers, hoes, drills, ornaments of different kinds, and hundreds of knives, arrowheads and spearpoints in jasper and argillite, with fragments of pottery and clay pipes, from Morris, Gloucester, Camden, Cape May, Salem, Mercer and Cumberland Counties, New Jersey; a grooved stone axe from Delaware; a celt and javelinpoints from Owego, N. Y.; two steatite pipes from

Bucks County, grooved stone axe from Lancaster County, and arrowheads, spearpoints, grooved axes, shell and glass beads and fragments of pottery, plain and ornamented, from Chester County, Penn.; arrowheads, and spearpoints of different patterns, and fragments of pottery, some waterworn, from Polk County, North Carolina; a rude steatite bowl and implements of like character from Chester County, Penn., collected by Mr. ISAAC S. KIRK; four unfinished ornamental axes of stone collected by Dr. C. H. SRUBBS in Lancaster County, Penn.; grooved stone axe, stone hoes, fragments of a steatite pot from Cumberland County, N. J., collected by Dr. E. HOLMES; fragments of pottery, plain, perforated and cord-marked from the same County, collected by Mr. CHARLES REEVES, — Explorations of Dr. C. C. ABBOTT conducted for the Museum.

19426 — 19450. Grooved stone axes, knives, scrapers, drills, arrowheads and spearpoints of jasper and argillite of the usual New Jersey patterns, from Trenton, N. J. — Collected and presented by Master RICHARD M. ABBOTT.

19451 — 19511. Stone celts, grooved axes, mullers, spearpoints, arrowheads, drills, scrapers, knives, disks and ornaments of different sizes and patterns; shell beads and earthen disks and fragments of pottery, from Knox County, Tennessee; a grooved axe from Maryville, Tennessee, and a broken stone implement from Wayne County, Ky. — By PUNCHASK.

19512 — 19514. Cranium from West Chester, Penn., collected by Mr. ISAAC S. KIRK; another from Burlington County, N. J., collected by Mr. MICHAEL NEWBOLD, and fragments of one from Gloucester County, N. J. — Presented by Dr. C. C. ABBOTT.

19515 — 19516. Cranium from a grave, and grooved stone club-head from the surface of a mound on Mrs. Gibson's Farm at Marion Centre, Kansas. — Collected and presented by Mr. MELVIN BILLINGS.

19517 — 19715. Fragment of clay-slate, and large grooved hammer stone from a shellheap near Marion Centre, Kansas; stone pipes, drills, scrapers, knives, hammers and implements for grinding and polishing, all of stone, from the surface on Mr. Leachman's farm and other places near Marion Centre, Kansas; shell ornaments, flint knives, burnt clay and bones, rubbing stones, grooved hammers, and other implements of stone; glass bead, bone awl and other worked bones, obsidian flakes, unio shells, flint drills, arrowheads and hoe of stone, red chalk, and pipes of catlinite from cairns on the west side of Cottonwood River, three miles south of Marion Centre, Kansas; bone whistle and awl, celt and other implements of the same material, implements of flint and horn, arrow straighteners of stone, and grooved hammerstones, from a mound on Mrs. Gibson's farm near Marion Centre, Kansas; fragments of burnt human bones, flint spearpoint, knife, drill, flakes and broken implements, rubbing stone, red ochre and a shark's tooth, from chambered mounds on Keller's farm in Clay County, Missouri; flint implements from the surface near Harlem, Clay County, Missouri; fragments of human skull, and five large flint daggers and a hematite bead buried with it, ornament of catlinite, red and yellow ochre, flint knives, drill, scraper, and dagger,

from a mound on Wolf Den Ridge in Platte County, Missouri; arrow-heads and javelin points, and knives of stone from Old River near Little Rock, Ark., collected and presented by Mrs. Knapp; spearpoint of rose colored flint and pipe of striped slate from Conway County, Ark., collected and presented by Mrs. John C. Ward; celt and knife of slate, sharpening stone, fragments of human cranium, red ochre and a number of earthen bowls and water-bottles from mounds on Mr. Morse's farm, fifty miles from Little Rock on the Fort Smith R. R.; burnt clay, iron ore, earthen disk and fragments of small human figure in terra cotta, hammerstones with and without finger pits, rubbing stones, borers, arrowheads, knives and other implements of flint from mound on Pond Bottom, sixteen miles south of Little Rock, Ark.; human cranium, flint flakes, knives, celt and arrowheads, beads of shell and clay, earthen jars, bowls etc., plain and painted, similar in form and ornamentation to those found in the mounds of southeastern Missouri, and the stone-graves of Tennessee, from an earthen burial mound on Mrs. Mosler's farm near Westpoint, Ark. — Explorations of Mr. E. CURTIS conducted for the Museum.

19716—19717. Stone celt and hammerstone, from near Westpoint, Ark. — Collected and presented by Mrs. Mosier of that place.

19718. Celt of slate from near Mrs. Mosier's farm three and one-half miles below Westpoint, White County, Ark. — Collected and presented by Mr. WM. McALISTER.

19719—19722. Fragments of pottery, flint flakes, knives and rude implements of stone, from Beesley's Point, N. J., and from Shawnee Island. — Collected and presented by Messrs. ABBOTT and PUTNAM.

19723—19725. Palæolithics found *in situ* on Dr. Abbott's farm near Trenton, N. J. — Collected and presented by Mr. F. W. PUTNAM.

19726—19727. Grooved stone axe and fragment of steatite pot, perforated, from Georgia — BY PURCHASE.

19728—19730. Casts of three pipes — one resembling a parrot, one a beaver and the third a turtle. — Presented by Mr. J. G. HENDERSON, Winchester, Ill.

19731. Cast of human head, original in steatite, from a shell heap in Monmouth Co., N. J. — Presented by Mr. C. F. WOOLKY.

19732. Perforated disk of steatite from Chester Co., Pa. — Collected and presented by Mr. ISAAC S. KIRK.

19733. Broken implement of Jasper from Rhode Island. — Collected and presented by Col. THEODORE LYMAN, Boston.

19734. Rude Stone Implement from North Andover, Mass. — Collected and presented by Mr. A. THOMPSON, North Andover.

19735—19738. Stone knives and arrowhead from west side of Lake Saratoga. — Collected and presented by Dr. J. P. HASKINS, Saratoga.

19739. Indian pestle, from Newport, R. I., probably a natural form. — Collected and presented by Mr. GORDON-CUMMING.

19740—19741. Tufa and fragments of oak tree found buried in it 22 feet below High Rock Spring, Saratoga, N. Y. — Collected by Mr. JOHN H. WHITE, and presented by Mr. J. P. BUTLER, Saratoga.

19742 — 19746. Spearpoints and scraper from Lake George, N. Y. and spearpoint from Luzerne, Warren County, N. Y. — Collected and presented by Mr. F. W. PUTNAM.

19747 — 19750. Beads and disk of shell, and drill and javelin point of flint, from the Big Mound at St. Louis, Mo. — Collected and presented by Mr. W. H. PULSIFER, St. Louis.

19751. Obsidian Javelinpoints from Teotihuacan, Mexico. — Collected by Mr. HENRY WARD POOLK and presented by Gen. C. G. LORING, Boston.

19752. Green and white glazed pottery from China. — Presented by Mr. J. P. BUTLER, Saratoga Springs, N. Y.

19753 — 19755. Fragment of wooden lintel, string made of yucca, and a corn cob, from a cliff-house in Mancos Cañon, Colorado. — Collected and presented by Mr. CHARLES ALDRICH, Webster City, Iowa.

19756 — 19787. Arrowheads, spearpoints of different patterns, knives, celts and grooved axes all of stone, from Watauga, Burke, Alexander and Catawba Counties, N. C. — Collected and presented by Mr. JOHN T. HUMPHREYS.

19788. — 19792. Javelinpoints from North Carolina, Wareham, Mass. and Keokuk, Iowa, and stone knife from a shell mound in Tennessee. — Collected and presented by Mrs. ERNEST INGERSOLL.

19793 — 19814. Four stone celts and a perforated stone from Ireland; celt, scrapers, flakes and rude implements from England, and a rude implement that has been retouched, from St. Gilles, Abbeville, France. — Collected and presented by Mr. JOHN EVANS, of King's Langley, England.

19815. Jade Axe in socket of Antler from a Swiss Lake dwelling. — Presented by Mrs. ERMINIE A. SMITH, Jersey City.

19816 — 19817. Bronze figures of Osiris and of Isis and Horus from Memphis, Egypt. — Collected and presented by Lieut. Commander A. R. McNAM, U. S. N., Saratoga.

19818 — 19896. Six large alabaster vases, scent bottle of the same material, and bronze statuettes of Aps, Osiris, Isis and Horus from the tombs at Sakkara; marble figures of Isis and Horus, inscribed tablet of stone, bronze weights, glazed earthen pendants, beads and amulets, and seven scarabæi from Thebes; ointment bottle, beads of different substances and fragment of carved stone from tombs of the kings; alabaster ointment boxes, fragments of vases and human figures in stone from Karnak; stone scarabæus, earthen osirids, alabaster bottles, bronze head of Osiris, and fragments of stone and stone carvings from different localities in Egypt; human head in marble from Athens; fragment of cornice of temple at Eleusis, Greece; a polished stone celt, and a stone pipe with figure of bear carved on it, both from Texas. — The WELLS COLLECTION, by PURCHASE.

19897 — 19938. Large Stone Idol, small human figures in stone and terra cotta, earthen jars and a whistle, rubbing stone and shell pin from the Island of Zapatera; five crania and other human bones, beads of different materials, and a wooden stool or pillow from the cave of Cucirizna; painted earthen bowl, fragments and ornaments of vases in

pottery, stone idol, and a celt from Nicaragua.—Explorations of Dr. EARL FLINT conducted for the Museum.

19939 — 19956. Stone pestles and ornaments from an ash bed under a mound in Cattaraugus County, N. Y.; and an iron tomahawk from the surface in the same county, collected by Mr. Cowing; stone celts, drills, knives, arrowheads and javelinpoints, and fragments of pottery and human bones from the site of a large mound in western New York.—Collected and presented by Dr. F. LARKIN, Randolph, N. Y.

19957. Burnt corn from graves at Madisonville, Ohio.—Collected by Dr. C. L. METZ and presented by the MADISONVILLE LITERARY AND SCIENTIFIC SOCIETY.

19958 — 19965. Earthen bowl and dish, with the crude and sifted clay, Unio shell and polishing stone used in making them, by the Mattaponi Indians, Virginia.—Made by an old woman of that tribe, and presented to the Museum by the Rev. Dr. E. A. DALRYMPLE, Baltimore.

19966 — 19967. Hair of an Albino and of a Bushman from South Africa.—Collected and presented by Dr. S. KNEELAND, Boston.

19968 — 19970. Fragments of pottery, incised and cord-marked, from the site of an Indian lodge near Fort Sisseton, Dakota Territory.—Collected and presented by Mr. AUGUSTINE GUCKS, U. S. Army.

19971 — 19998 Pottery, plain, stamped, incised, and cord-marked, flint chips, and broken stone implements, perforated shells, celt made of shell, and human bones from the shellfields and shellmounds of Indian and St. John's Rivers, Florida; human and other bones from Gins Grove Mound, near Mellonville, Florida.—Collected and presented by Mr. J. FRANCIS LE BARON, Titusville.

19999. Large wooden "yagona" bowl, from the Fiji Islands.—Presented by the ESSEX INSTITUTE, Salem, Mass.

20000.—A club—perforated stone on a pointed stick—from New Britain Island.—Presented by Mr. APPLETON STURGIS, New York.

20001 — 20002. Fragments of earthen bowl and dipper from Aztec Springs and Little Mancos Cañon, Colorado.—Collected and presented by Mr. CHARLES ALDRICH, Webster City, Iowa.

20003 — 20102. Leather sash and pegged leather-shoes, perforated shells, glass disk and ring, beads of amethyst and green stone, fragments of glazed pottery, stone ornaments of different shapes, and a scarabæus from Thebes; fragments of glazed pottery, glass and stone, and ostrids from Sakkara and Glzeh; scarabæi and fragments of glazed pottery, stamped glass and of stone from Elaphantine; ornaments in stone, hematite and glazed pottery, scarabæi, stone tablet, necklace of glazed earthen beads, and one of scarabs, images, beads, etc., of the same material, braids of hair, and fragments of mummy cloth from Egypt; scales, bottle, fan, and pseudo-antique hieroglyphics with clay stamps of the same, and fragments of pottery from Arabia; a wooden spoon from Persia; fire stick, wooden comb and quiver with poisoned arrows used by the Somauli, Africa; betel nut enclosed in gold leaf from Bombay; charcoal from Pompell; fragments of pottery, and coins from

Malta and the Levant, and human hair from the Fiji Islands and of the so-called Aztec girl.—Collected by the late Dr. CHARLES PICKERING and presented by Mrs. PICKERING, Boston.

20103—20108. Carved human figures from Japan; a club from Fiji; bow from the Pacific Islands and Eskimo harpoonpoints of bone and of bone and iron.—Presented by Mr. CHARLES H. GUILD, Somerville.

20109—20114. Flint implements; fragments of pottery and bark; shells, and burnt corn cobs from a mound ten miles above Bismark, Dakota Territory.—Collected and presented by Mr. GEO. W. SWERT, Bismark, D. T.

20115. Iron pointed arrows from the interior of Africa.—Collected by Stanley's party and presented by Mr. WM. L. WELCH, Boston.

20116—20123. Stone implements from Howard and Anne Arundel Counties, Md.—Collected and presented by Mr. J. D. MCGUIRK.

20124—20125. Shell "totem" with a complicated figure carved on it, from a mound in Meigs County, Tenn., and one with the figure of a rattlesnake, from a stone grave in Green County, East Tenn.—By PURCHASE

20126—20265. Copper and shell beads, human and animal bones, shells and shell pins, stone celts and polishing stones, bone awls and other worked bones, different colored pigments, spindlewhorls and fragments of pottery, and a very interesting series of over fifty earthen jars, bottles, bowls and pots, painted and plain, of the same general forms and styles of ornamentation as those found in the mounds of Southeastern Missouri and in the stone graves of Tennessee, from the Stanley Mounds in Cross County, Arkansas; nineteen stone celts, knives and scrapers; nine earthen pots and jars similar to those mentioned above; earthen disks, pins, labret and pipes; burnt clay and charcoal, and implements of antler found on the surface within the enclosure, or earthen wall, that surrounded the above mentioned mounds.—Explorations of Mr. E. CURTISS conducted for the Museum.

20266—20298. Two grooved stone axes and an assortment of drills, scrapers, knives, arrowheads and spearpoints of white flint from Allenton, St. Louis County, Mo.—Collected and presented by Mr. CHARLES E. FILLING, St. Louis.

20299—20309. Copper beads, worked bones, burnt clay and corn cobs, with fragments of pottery and implements of stone from a mound at Fort Lincoln, Dakota Territory.—Collected and presented by Mr. G. W. SWERT.

20310. Cast of part of the Tablet of the Cross at Palenque.—Presented by the SMITHSONIAN INSTITUTION.

20311—20314. Perforated stone ornaments and two leaf-shaped implements of flint from the Ohio Valley.—Presented by the late Prof. JEFFRIES WYMAN.

20315—20316. Two stone spearpoints from Newburyport, Mass.—Collected and presented by Mr. C. H. KNIGHT.

20317—20320. Stone celts from Doane's Island, in Frenchman's Bay, and from Hull's Cove on Mount Desert Island, Maine, and chips and broken implements from Salisbury, Mass.—Presented by the late Prof. JEFFRIES WYMAN.

20321—20357. Stone drills, knives, arrowheads and spearpoints from Cape Cod; arrowheads from Taunton, Mass., and Rhode Island.—Collected by the late CHARLES HAMMOND, and received from Mr. SAMUEL H. RUSSELL in 1870.

20358—20360. Hammerstone and rude implements of stone from Massachusetts, collected by the late H. D. THOREAU.—Presented by the BOSTON SOCIETY OF NATURAL HISTORY in 1869.

20361. Stone javelinpoint from Plum Island, Mass.—Collected and presented by Mr. LOUIS CABOT.

20362. Stone chips and rude implements of stone from Canton, Mass.—Collected and presented by Dr. SAMUEL CABOT.

20363. Brass ring from an Indian grave near Canandaigua, N. Y.—Presented by Mr. ALEX. HOWELL.

20364. Broken flint implement from Big Bone Lick, Ky., six feet below the surface.—Collected and presented by Prof. N. S. SHALER, Cambridge.

20365—20366. Flint spearpoints from Missouri.—By PURCHASE.

20367—20385. Hair of mummy, fragment of the wood of a coffin, and of a painted stone from a chamber in the Tombs of the Kings, a wooden eye, lenua, and ornaments of glazed pottery from Egypt; modern comb, pipe and inkstand from Damascus, Syria; modern bracelets and cords worn by the Greeks as charms, the former against evil spirits and the latter against tanning, from Cyprus; ancient bricks from Rome and Herculaneum; small glass vessel and small caryatid probably from Italy; modern cup shaped lamp of terra cotta probably from Cyprus; fragment of vase from the "Tomb of Agamemnon," and a spearpoint of beaten copper probably North American.—From the collection of the late Hon. CHARLES SUMNER.

20386—20387. Fragments of cord marked and incised pottery from Plattsburg, N. Y.—Collected and presented by Prof. GEO. A. PERKINS.

20388—20391. Fragments of earthen vases, and human bones with charcoal, ashes and clay from mounds in Delaware County, Ohio.—Explorations of Prof. JOHN T. SHORT conducted for the Museum.

20392—20481. Bone implements, fragments of pottery, burnt bones, human and animal, flint knives, chips and a dagger, and red ochre, from mounds and refuse heaps on Spoon River, Peoria County, Ills.—Collected and presented by Mr. W. H. ADAMS, Elmore, Ills.

20432—20442. Models of Pueblos and Cliff Ruins in New Mexico, Colorado and Arizona, and one of "Montezuma's well" near Camp Verde, Arizona.—By PURCHASE.

20443—20544. Flint flakes, knives, arrowheads and implements from Kendall, Burnet, Williamson, Anderson, DeWitt, Victoria and Refugio Counties, Texas; two earthen pots, made by Kickapoo Indians, and fragments of pottery from Anderson and Refugio Counties, Texas; flint flakes, arrowheads, and fragments of pottery from sand hills near Sharpsburg, San Patricio County, Texas, and shells from the shellheaps on the Sabine River and from near Lamar, Texas.—Explorations of Dr. EDWARD PALMER conducted for the Museum.

20545. Clay figures illustrating customs and costumes from Tientsin, China.—Collected and presented by Mr. FRANCIS P. KNIGHT, U. S. Consul at Newchwang, China.

20546—20549. Axe, hammer and maul of grooved stone, probably Cheyenne Indian, and a "flesher" made of elk horn, by the Oucapa Sioux, all from Fort Sisseton, Dakota Ter.—Collected and presented by CHARLES E. MCCLESNEY, M. D., U. S. Army.

Additions to the Library.

From the Hon. Robert C. Winthrop. Correspondence of some of the Founders of the Royal Society of England with Governor Winthrop of Connecticut, 1661-1672. Reprinted from the proceedings of the Massachusetts Historical Society. Pamphlet, 8vo. Boston, 1878. *Mémoires de la Société des Antiquaires du Nord*, Nouvelle série, 1877. Pamphlet, 8vo. Copenhagen. *Aarboger for Nordisk Oldkyndighed og Historie* udgivne af det Kongelige Nordiske Oldskrift-selskab. Parts 1, 2, 3 and 4 of 1877, and 1 of 1878. One vol., 8vo. Copenhagen.

From the Author. *Origine de la Navigation et de la Pêche*, 1867, and *Classification des diverses Périodes de l'Âge de la Pierre*, 1873, two pamphlets, 8vo, by Gabriel de Mortillet. Paris.

From the Society. *Recueil des Notices et Mémoires de la Société Archéologique du Département de Constantine*, 8e volume de la deuxième série. One volume, 8vo. Paris and Algiers, 1878.

From the Society. *Archivio per l'Antropologia e la Etnologia*, organo della Società Italiana di Antropologia, Etnologia e Psicologia comparata. Parts 3 and 4 of Vol. VIII and No. 1 of Vol. IX. Pamphlets, 8vo. Florence, 1878-79.

From the Author. *Des diverses Espèces de Prognathisme: Essai de Classification des Races Humaines actuelles; L'Art et l'Anthropologie; De l'Évolution des Races Humaines; Des Anomalies de nombre de la Colonne Vertébrale chez l'Homme; Note sur les Métis d'Australiens et d'Européens; Étude sur les Races Indigènes de l'Australie; Étude sur la Taille considérée suivant l'Âge, le Sexe, l'Individu, les Milieux et les Races; Fouilles de Ramasse; Rapport sur la Population indigène de l'Oasis de Biskra; Histoire de l'Anthropologie de 1880 à 1889; Des Métis Humains; De la Notion de Race: Instructions sur l'Anthropologie de l'Algérie.* Fourteen pamphlets, 8vo, by Dr. Paul Topinard, Paris, 1872-78.

From the Author. *Sur la Mensuration de la Capacité du Crâne; De Programme de l'Anthropologie; Compte Rendu des Travaux de la Société d'Anthropologie de Paris pendant les Années 1865-1867; Recherches sur l'Indice Orbitaire; Sur le Stéréographe; Instructions Craniologiques et Craniométriques de la Société d'Anthropologie de Paris; Les Races fossiles de l'Europe Occidentale; Les Proportions relatives des Membres supérieurs et des Membres inférieurs chez les Nègres et les Européens; Mémoire sur les Crânes de Basques de Saint-Jean-de-Lux; Sur le Trans-*

formisme; Anthropologie; Échelle Chromatique des Yeux; Sur l'Angle Orbito-Occipital; Sur les Proportions relatives du Bras, de l'Avant-Bras et de la Clavicule chez les Nègres et les Européens; Histoire des Travaux de la Société d'Anthropologie de Paris, 1859-1863; De l'Influence de l'Éducation sur le Volume de la Tête; Les Crânes de Solutré; Sur les Doctrines de la Diplogénèse; Sur les Indices de Largeur de l'Omoplate chez l'Homme et les Singes; Sur le Plan horizontal de la Tête et sur la Méthode trigonométrique; Sur l'Endocrâne nouveaux Instruments destinés à étudier la Cavité Crânienne sans ouvrir le Crâne; Nouvelles Recherches sur l'Anthropologie de la France en général et de la Basse Bretagne en particulier; Étude sur les Propriétés hygrométriques des Crânes considérées dans leurs Rapports avec la Craniométrie; Sur la Déformation Toulousaine du Crâne; Sur la Nomenclature Cérébrale; Éloge funèbre de Pierre Gratiolet; Sur la Valeur des divers Angles faciaux et sur un nouveau Goniomètre facial; Sur les Crânes de la caverne de l'Homme-Mort; Indices céphaliques; Sur la Trépanation du Crâne et les Amulettes crâniennes à l'Époque néolithique; Notions Complémentaires sur l'Ostéologie du Crâne; Sur les Projections de la Tête et sur un nouveau Procédé de Céphalométrie; Sur la Topographie cranio-cérébrale ou sur les Rapports anatomiques du Crâne et du Cerveau; Anatomie comparée du Circonvolutions Cérébrales; Description of a new Goniometer (translation). Thirty-six pamphlets, 8vo, by Dr. Paul Broca, Paris, 1862-79.

From Dr. Paul Broca, Paris. Le Bassin dans les Sexes et dans les Races par R. Verneau, 1875, and Congrès International des Sciences Anthropologiques, — Discours du Président et Rapports des Commissaires, 1878. Two pamphlets, 8vo, Paris.

From M. Émile Cartailhac. Compte rendu de la 4e Session du Congrès International d'Anthropologie et d'Archéologie préhistorique (Copenhague), suivi de Visites dans les Musées de Copenhague, Christiana, Stockholm et Lund par P. Cazalis de Fondouce. Pamphlet, 8vo. Paris, 1869-70. Matériaux pour l'Histoire Primitive et Naturelle de l'Homme, Revue Mensuelle Illustrée, dirigée par Émile Cartailhac. Vols. 6, 7, 8, 9, 11 and 12, 8vo. Toulouse, 1870-1877.

From the Academy. Annales de l'Académie d'Archéologie de Belgique. Vols. 2, 3, 4, 5, 6, 7, 8, 9, 10, of the 2nd series. Antwerp, 1866-1874. Nine vols., 8vo.

From Prof. Henry W. Haynes, Boston. La Suède Préhistorique par Oscar Montelius, traducteur J. H. Kramér, Stockholm, 1874; Compte Rendu de la Septième Session du Congrès International d'Anthropologie et d'Archéologie Préhistoriques, tenue à Stockholm, par J. De Baye, Paris, 1875; Congrès International des Américanistes — Compte Rendu de la première Session, Paris and Nancy, 1875; Revue Archéologique for August, 1877; Matériaux pour l'Histoire Primitive et Naturelle de l'Homme par Émile Cartailhac. Parts 8 and 11, of Vol. VII, of the second series, Toulouse, 1876; De l'Homme Antédiluvien et de Ses Œuvres par M. Boucher de Perthes, Paris, 1860; Notice sur les Grottes Préhistoriques de la Marne par Joseph De Baye, Paris, 1875; Études d'Archéologie Préhistorique par Adrien Arcelin, Paris, 1875; Sur les Silex considérées comme portant les

Marques d'un Travail Humain découverts dans le Terrain Miocène de Thenay par l'Abbé Bourgeois, Brussels, 1873; origine de la Navigation et de la Pêche par Gabriel de Mortillet, Paris, 1867; sur les Instruments des Sauvages de l'Océanie et leur Analogie avec les Instruments de la Période Quaternaire, and Démonstration de l'Emmanchure des Instruments des trois Époques de l'Age de Pierre, par Reboux, Paris, 1873 4; Sepolcreto e degli altri Monumenti Antichi scoperti presso Bazzano, Memoria dell'Avv. Arsenio Crespellani, Modena, 1875; Sugli Scavi della Certosa, Relazione dell'Ingegnere-Archeletto Capo Antonio Zannoni, Bologna, 1771; Storia dei Vulcani Laziali del Professore Giuseppe Ponzì, Rome, 1875; Gli ornamenti Spiralforni in Italia e specialmente nell'Apulia, Memoria con Figure di Angelo Angelucci, Turin, 1876; Di alcuni Oggetti Preistorici delle Caverne di Velo nel Veronese (con una tavola), Comunicazione del Socio Prof. Giovanni Omboni; Storia Naturale del Tevere del Prof. G. Ponzì, Rome, 1875; Notizie Archeologiche del Anno 1872, Raccolte e Riferite da D. Gaetano Chierici e Pio Mantovani; Ricerche Preistoriche e Storiche nella Italia Meridionale, 1872-1875, Scritti varii del maggiore Angelo Angelucci, Turin, 1876; Del vasi in Terra Cotta come Criteri di Cronologia, Lettera diretta al Prof. Luigi Piggorini dal Prof. Arturo Zannetti; Armi et Utensili di Pietra del Bolognese descritti e figurati, and L'Uomo Pliocenico in Toscana, both by Prof. Cav. Giovanni Capellini. Twenty-three pamphlets and two vols.

From the Society. Peinture de la Saint-Barthélemy par un Artiste contemporain comparée avec les Documents Historiques par Henry Bordier, and Genève et la Colonie de Vienne sous les Romains. Two pamphlets published by La Société d'Histoire et d'Archéologie de Genève. Genève, 1878-1879.

From the Author. Instructions Anthropologiques Générales, par Dr. Paul Broca. One vol., 12mo. Paris, 1879.

From the Author. La Nouvelle Société Indo-chinoise fondée par M. le Marquis de Croizier et son Ouvrage L'Art Khmer par le Dr. Legrand. Pamphlet, 8vo. Paris, 1878.

From Prof. D. Gumelindo Mendoza. Annales del Museo Nacional de México. Parts 1, 2, 3, and 4. Vol. 1, 4to. Mexico, 1877-1878.

From the Count of Toreno. Los Restos de Colon, Informe de la Real Academia de la Historia al Gobierno de S. M. sobre el supuesto Hallazgo de los verdaderos Restos de Cristoval Colon en la Iglesia Catedral de Santo Domingo. One vol., 12mo. Madrid, 1879.

From the Society. Beiträge zur Anthropologie und Urgeschichte Bayerns, Organ der Münchener Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. II Band, 4 Heft, III Band, 1 Heft. Munich, 1879.

From the Society. Baltische Studien, herausgegeben von der Gesellschaft für Pommersche Geschichte und Alterthumskunde. Parts 1, 2, 3, 4, vol. 29, 8vo. Stettin, 1879.

From the Society. Jahres-Bericht des Naturalischen Vereins von Wisconsin für das Jahre, 1878-1879. Pamphlet, 8vo. Milwaukee, 1879.

From the Society. 47, 48, und 49 Jahres-bericht des Vogtländischen Alterthumsforschenden Vereins Zu Hohenleuben.

From the Museum. Sechster Bericht des Museums für Völkerkunde in Leipzig. Pamphlet, 8vo, 1878.

From the Author. Natural History of Bezoar Stones, Calculi, etc., by Noah Cressy, M. D. Pamphlet, 8vo. Amherst, Mass., 1879.

From the Society. Proceedings of the Archæological Society of Athens, Greece, from Jan., 1878, to Jan., 1879. Pamphlet, 8vo. Athens, 1879.

From Lieut. George M. Wheeler, U. S. A. United States Geographical Surveys west of the 100th Meridian, Lieut. Geo. M. Wheeler, Corps of Engineers, in charge. Vols. 2, 4, 5, 6, 4to. Washington, 1875, 1878.

From the Smithsonian Institution. Miscellaneous Collections. XIII, XIV, XV, three vols., 8vo. Washington, 1878. Archivos do Museum Nacional do Rio Janeiro, Vol. I, part 1. Pamphlet, 4to. Rio de Janeiro, 1876. Notice sur la Colline de Sansan, suivie d'une Récapitulation des diverses Espèces d'Animaux Vertébrés Fossiles, trouvés soit a Sansan, soit dans d'autres Gisements du Terrain Tertiaire dans le Bassin Sous-Pyrénéen, par Ed. Lartet. Pamphlet, 8vo. Auch, 1851. La Légende des Nuttons et l'Homme de l'Age du Renne par Bernardin conservateur du Musée de Meille Belgique. Pamphlet, 8vo. Annecy, 1878. The Sculptures of Santa Lucia Cosumalwhuapa in Guatemala, by S. Habel, M. D. 4to pamphlet. Washington, 1879.

From the Author. Kranologische Untersuchungen von Dr. Emil Schmidt in Essen a. d. Ruhr. Pamphlet 4to. Berlin, 1879.

From the Bequest of Charles Pickering, M. D. of Boston, class of 1823.

Black Hawk and Scenes in the West, a National Poem by Elbert H. Smith. 1 vol., 8vo. New York, 1849. History of Egypt by Samuel Sharpe, 1 vol., 8vo. London, 1846. The Early History of Egypt from the Old Testament, Herodotus, Manetho and the Hieroglyphical Inscriptions, by Samuel Sharpe. 1 vol., 4to. London, 1846. Primitive Language of Spain and a Philosophical Examination of the Antiquity and civilization of the Basque People; an extract from the works of Don Juan Bautista de Erro. 1 vol., 8 vo. Boston, 1829. Die chronologie der Ägypter bearbeitet von Richard Lepsius. 1 vol., 4to. Berlin, 1849. Sanchoniatho's Phœnician History translated from the First Book of Eusebius de Præparatione Evangelica with a continuation of Sanchoniatho's History by Eratosthenes Cyrenæus's Canon, which Dicæarchus connects with the First Olympiad by the Rt. Rev. R. Cumberland, D. D., late Bishop of Peterborough. 1 vol., 8vo. London, 1720. Morton's Crania Americana. Folio. Philadelphia, 1839. L'Art de verifier les dates, thirty-eight vols., 8vo. Paris, 1819-1837. Observations on Crania by Jeffries Wyman, M. D., pamph. 8vo. An Inquiry into the distinctive characteristics of the Aboriginal Race of America by Samuel G. Morton, M. D., pamph. 8vo. Report on the present state of our Knowledge of Linguistic Ethnology by Prof. S. S. Haldeman, pamph. 8vo. Received through the Library of Harvard College.

From Geo. W. Morse, Cairo, Illinois. Photograph of Pottery in his collection.

From Prof. F. E. Nipher, St. Louis. Photograph of a skull taken from a mound at Iowa City. 1877.

From H. N. Angell, Providence, R. I. Three stereoscopic views of Stone quarry at Johnston, near Providence, R. I. 1879.

From Dr. R. J. Farquharson, Davenport, Iowa. Photograph of the "Elephant Pipe" found in a mound, in Muscatine Co., Iowa. 1878.

From Dr. S. Kneeland, Boston Mass. Photograph of a Stone Image, found at Strawberry Plains near Knoxville, E. Tenn. Ten Photographs of Africans, African Towns, etc.

From Dr. G. Barrata, San Luis Potosi, Mexico. Photographs taken from objects in his collection, 1879.

Fram H. A. Richardson, St. Louis, Mo. Photographs of Crania.

From the Author. Note on a Ready Method of Measuring the Cubic Capacity of Skulls. Observations on a Systematic Mode of Craniometry. Two pamphlets, 8vo, by George Busk, F. R. S.

From the Academy. Transactions of the Wisconsin Academy of Sciences, Arts, and Letters. Vol. IV, 1876-77. One vol., 8vo. Madison, Wisconsin, 1878.

From Harvard College Library. Proceedings of the Royal Irish Academy. Vol. I, Ser. II, No. 13. April, 1879. Dublin. The Transactions of the Royal Irish Academy. Vol. XXVII. 4to. Dublin, 1879.

From Prof. W. Boyd Dawkins. Further Discoveries in the Cresswell Caves, by Prof. W. Boyd Dawkins and Rev. J. M. Mills. Pamphlet, 8vo. 1879.

From N. H. Winchell, State Geologist. The Seventh Annual Report of the Geological and Natural History Survey of Minnesota for 1878. One vol., 8vo. Minneapolis, 1879.

From the Society. Annual Report of the Minnesota Historical Society, for 1878. Pamphlet, 8vo. Minneapolis, 1879.

From the Author. Observations upon the Cranial Forms of the American Aborigines, based upon Specimens contained in the Collection of the Academy of Natural Sciences of Philadelphia, by J. Altken Meigs, M. D. Pamphlet, 8vo. Philadelphia, 1866.

From the Author. Were They Mound-builders? By S. L. Frey, Palatine Bridge, N. Y. Pamphlet. 8vo. 1879.

From the Author. Sketches of the Past and Present Condition of the Indians of Canada, by George M. Dawson, Montreal. Pamphlet, 8vo.

From Principal J. W. Dawson. Report of the Geological Structure and Mineral Resources of Prince Edward Island, by J. W. Dawson, assisted by B. J. Harrington. Pamphlet, 8vo. Montreal, 1871.

From Henry McGuier, Saratoga Springs, N. Y. Manual of Mineralogy and Geology, by Ebenezer Emmons, M. D. One vol., 12mo. Albany, 1826. A Concise History of High Rock Spring. Pamphlet. Albany, 1868.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool, during the sixty-seventh session, 1877-78. No. 32. One vol., 8vo.

From the Author. The Palenque Tablet in the United States National Museum, Washington, D. C., by Charles Rau. Pamphlet, 4to. Washington. 1879.

From the Society. A Descriptive Catalogue of the Anatomical Museum of the Boston Society for Medical Improvement, by J. B. S. Jackson, M. D. One vol., 8vo. Boston, 1847.

From the Medical Faculty of Harvard University. A Descriptive Catalogue of the Warren Anatomical Museum, by J. B. S. Jackson, M. D. One vol., 8vo. Boston, 1870.

From Stephen Salisbury, Jr. The Mexican Calendar Stone, by Philipp J. J. Valentini, Ph.D. Terra Cotta Figure from Isla Mujeres, northeast coast of Yucatan, by Stephen Salisbury, Jr.. Archæological Communication on Yucatan, by Dr. Augustus Le Plongeon, and Notes on Yucatan, by Mrs. Alice D. Le Plongeon, compiled and arranged by Stephen Salisbury, Jr. One vol., 8vo. Worcester, 1879. Photograph of Lieut. Gov. F. P. Barlee, of British Honduras.

From Dr. F. F. Hilder, St. Louis. Mound Explorations in Southeastern Missouri, by C. Crosswell. Pamphlet, 8vo 1877. Photographs of Shell Disks from Missouri and Illinois. Photographs of a broken Human Figure, of stone, from a mound $2\frac{1}{2}$ miles from Cahokia mound, Illinois.

From the Author. Archæology of the Champlain Valley, by Prof. Geo. H. Perkins. Pamphlet 8vo. 1879.

From the Author. The Ancient Pueblos, or the Ruins of the Valley of Rio San Juan, by Edwin A. Barber. Parts 1 and 2. 1878. Two pamphlets, 8vo.

From the Literary and Scientific Society of Madisonville, Ohio. Notice of some recent Archæological Discoveries in the Little Miami Valley, by Frank W. Langdon, Secretary. Pamphlet, 8vo. 1879.

From Samuel H. Scudler. Description of a Sepulchral mound near Newark, Ohio, by O. C. Marsh. Pamphlet, 8vo. 1866.

From the Author. Primitive Arts and Modes of Life, by H. R. Howland. Pamphlet, 8vo. Buffalo, 1879.

From the Author. Pre-Historic Copper Implements, by Rev. Edmund F. Slafter. Pamphlet, 8vo. Boston, 1879.

From the Author. The Floridian Peninsula by Daniel G. Brinton. 1 vol., 12mo. Philadelphia, 1859.

From Prof. John Collett. 8th, 9th and 10th Annual Reports of the Geological Survey of Indiana, made during the years 1876, 77, 78, by E. T. Cox, State Geologist, assisted by Prof. John Collett and Dr. G. M. Lettvet. 1 vol., 8vo. Indianapolis, 1879.

From S. M. Shallenberger, Toulon, Illinois. Stark County and its Pioneers by Mrs. E. H. Shallenberger. 1 vol., 8vo. Cambridge, Illinois. 1876.

From the Author. Southwestern Pennsylvania in Song and Story, by Frank Cowan. 1 vol., 12mo. Greensburg, Pa., 1878.

From the Author. Geological History of Jersey County, Ill., by Hon. William McAdams, Otterville, Illinois.

From Dr. C. C. Abbott. The Mound-builders, were they Egyptians; and did they ever occupy the State of New York? By William L. Stone. New York, Sept. 1878. Pamphlet, 8vo. Geology of the County of Cape May, State of New Jersey. 1 vol., 8vo. Trenton, 1857.

From the Museum. The Tenth Annual Report of the American Museum of Natural History, New York. January 1st, 1879. Pamphlet, 8vo.

From the Trustees. Third Annual Report of the Trustees of the Museum of Fine Arts, for the year ending Dec. 31st, 1878. Pamphlet, 8vo. Boston, 1879.

From the Editor. The Kansas City Review of Science and Industry. Edited by Theo. S. Case. Vol. I, No. 7. Vol. II, Nos. 1 to 12, and Vol. III, Nos. 2, 3, 4, 5, 6, 7, 8, 10. Kansas City, Mo., 1877-79.

From Lewis S. Hayden. Washington, D. C. Reports of the Commissioner of Indian Affairs for the years 1866, 67, 68, 70, 71, 72, 73, 74, 75, 76, 77, 78. 11 vols., 8vo.

From the Society. Reports and Communications made to the Cambridge Antiquarian Society, No. XXIII, being the fourth and concluding number of the Third volume. Cambridge, 1879. Supplement to the History and Antiquities of the Parish of Bottisham and the Priory of Anglesey in Cambridgeshire, by Edward Hallstone, Jr. No. XVI. 1 vol., 8vo. Cambridge, England, 1878.

From Alexander Agassiz, Curator of Museum of Comparative Zoölogy. Annual Report of the Curator of the Museum of Comparative Zoölogy at Harvard College, for 1878-79. Bulletin No. 16, Vol. 5, Cambridge, Mass., 1879.

From the Author. Evidences of Cannibalism in an Early Race in Japan, by Edward S. Morse. Pamphlet, 8vo. Tokio, Japan, 1879.

From the Trustees. Ninth Annual Report of the Trustees of the Metropolitan Museum of Art, May, 1879, New York, 1879.

From F. Story Osgood, Newburyport. Photograph of Pottery from the Island of Bonaca, coast of Honduras.

From F. W. Putnam. Photographs of a N. W. coast type of Pipe, found in New Hampshire. Remarks on the Chambered Mounds in Clay County, Missouri, by F. W. Putnam, 1879.

From Dr. Edward Palmer. Stereoscopic views of Mexico. Notes on Indian Manners and Customs, by Dr. Palmer. Pamphlet, 8vo, 1878.

From the Institute. Bulletin of the Essex Institute. 10 vols., 8vo. Salem, 1866-79.

From Mrs. Charles Pickering, Boston, Mass. Chronological History of Plants, by Charles Pickering, M. D. One vol., 4to. Boston, 1879. Four daguerrotypes of Indians and Chinese.

From the Author. The Prehistoric Monuments of the Little Miami Valley, with chart, by Charles L. Metz, M. D. Pamphlet, 8vo. 1878.

From J. D. McChesney, Washington, D. C. Notes upon the First Discoveries of California and the Origin of its Name, by Prof. Jules Marcou; being part of Appendix N. N. of the Annual Report of the Chief of Engineers, U. S. A., for 1878. Pamphlet, 8vo. Washington, 1878.

From the Society. The Journal of the Cincinnati Society of Natural History. Vol. I, No. 4. Vol. II, No. 1. Two pamphlets, 8vo, 1879.

From the Society. Proceedings of the American Antiquarian Society. Nos. 72, 73. Worcester, 1879.

From the Editor. King's Pocket Book of Cincinnati. Edited and published by Moses King. One vol., 12mo. Cambridge, 1879.

From the Author. Notes on Crania in the Army Medical Museum, Washington, D. C., by Dr. Geo. A. Otis, Asst. Surgeon, U. S. A.

From the Davenport Academy of Natural Sciences. Lithograph of a Stone Tablet found near Davenport, Iowa.

Massachusetts Historical Society. Photograph of a Medal of lead found at the mouth of Cape Fear River, N. C., by B. R. Moore.

From William Wallace Tooker, Sag Harbor, New York. Photograph of an Indian Vessel found at Sag Harbor, New York, 1879.

From A. G. Richmond. Drawings of specimens from Canajoharie, New York. A. G. Richmond's Collection.

From the Imperial University of Tokio. Memoirs of the Science Department of the University. No. I.—The Shellheaps of Omori, by E. S. Morse. Royal 8vo. Tokio, 1879.

From Department of Interior, Washington. Bulletin U. S. Geological and Geographical Survey, F. V. Hayden in charge, Vol. IV, Nos. 2, 3, 4. Vol V, No. 1. 4 pamphlets 8vo, Washington, 1878-9, and Miscellaneous Publications Nos. 9 and 10, 2 pamphlets 8vo, Washington, 1877-8.

By Purchase. Mycenæ and Tiryns, by Dr. Henry Schliemann. 1 vol., 8vo. New York, 1878. Pottery and Porcelain, by William C. Prime, 1 vol., 8vo. New York, 1878. Cyprus, by L. P. di Cesnola. 1 vol., 8vo. New York, 1878. Footprints of Vanished Races, by A. J. Conant, 1 vol., 8vo. St. Louis, 1879. Catalogue of Scientific Serials, 1633-1876, by Samuel H. Scudder. 1 vol., 8vo. Cambridge, 1879. The Mound Builders, by J. P. MacLean. 1 vol., 12mo. Cincinnati, 1879. Mastodon, Mammoth and Man, by J. P. MacLean. 1 vol., 12mo. Cincinnati, 1878. Manual of the Antiquity of Man, by J. P. MacLean. 1 vol., 12mo. Cincinnati, 1878. The American Antiquarian. Nos. 1, 2, 3, 4, of Vol. I, and Nos. 1, 2, of Vol. II. Edited by Rev. Stephen D. Peet, Clinton, Wisconsin. Stereoscopic views of the Pueblo of Taos, the Ruins of the old church at the Pueblo of Taos, and of a Cart, a Plough and the ovens of the Pueblo Indians of Taos, New Mexico.

REPORT OF THE EX-TREASURER.

*To the Trustees of the Peabody Museum of American Archaeology and
Ethnology in connection with Harvard University:—*

STEPHEN SALISBURY, their Ex-treasurer, respectfully reports, that since Jan. 15, 1879, when his resignation as Treasurer was accepted, he has retained in his possession because he had no authority to transfer:—

30 Massachusetts Const Defence 5 per cent. Specie Registered Notes, each for \$5,000, dated July 1, 1863, due July 1, 1883, the gift of George Peabody, Esq., viz.:—

9 Notes of \$5,000, No. 46 to 54, for Collection Fund	\$45,000 00
9 Notes of \$5,000, No. 55 to 63, for Professor Fund	45,000 00
12 Notes of \$5,000, No. 64 to 75, for Building Fund	60,000 00

And on Jan. 14, 1879, by his last account as Treasurer, said Salisbury was charged with a balance of Collection Fund	5,114 61
And with a balance of Building Fund	948 60

And he has received the Income from the Mass. 5 per cent. Specie Notes, as above, for July 1, 1879 and Jan. 1, 1880, and accounts for money in his hands and his payments thereof, as follows:—

Dr.

STEPHEN SALISBURY, *For Collection Fund is debtor.*

1879.

Jan. 14. To Balance of Account	\$3,114 61
May 20. To received Amount of Note of Worcester Gas Light Co., July 15, 1876, \$600, Int. 5 per cent.	611 58
July 5. To received 6 mo. Int. on Mass. 5 per cent. Specie Notes, as above, to 1st Inst.	1,125 00
July 5. To received 6 mo. Int. on Mass. 5 per cent. Specie Notes of Professor Fund, as above, to 1st Inst.	1,125 00

1880.

Jan. 6. To received 6 mo. Int. on Mass. 5 per cent. Specie Notes, as above, to 1st Inst.	1,125 00
Jan. 6. To received 6 mo. Int. on Mass. 5 per cent. Specie Notes of Professor Fund, as above, to 1st Inst.	1,125 00

\$10,236 19

Cr.

And he is credited for Collection Fund.

1879.		
Feb. 13.	By paid F. W. Putnam, Curator, by Vote of Trustees this day	\$3,000 00
Feb. 25.	By paid Draft of Dr. Earl Flint, in Nicaragua, by Vote of Trustees Nov. 25	300 00
May 21.	By paid F. W. Putnam, Curator, balance in hands of S. Salisbury, by Vote of Trustees, May 20	2,114 61
May 21.	By paid F. W. Putnam, Curator, the Amount of Worcester Gas Light Co. Note, by Vote of Trustees, May 20	611 58
July 14.	By paid F. W. Putnam, Curator, by Vote of Trustees, May 20	1,728 81
Nov. 28.	By paid F. W. Putnam, Curator, by Vote of Trustees, Nov. 25	221 19
1880.		
Jan. 6.	By paid F. W. Putnam, Curator, by Vote of Trustees, Nov. 25	1,000 00
Feb. 4.	By Balance in Cash	1,250 00
		<u>\$10,226 19</u>

Dr.

And STEPHEN SALISBURY, for Building Fund is debtor.

1879.		
Jan. 14.	To Balance of Account	\$948 00
July 5.	To 6 mo. Interest on Mass. 5 per cent. Specie Notes, to 1st Inst.	1,500 00
1880.		
Jan. 6.	To 6 mo. Interest on Mass. 5 per cent. Specie Notes, to 1st Inst.	1,500 00
		<u>\$3,948 00</u>

Cr.

And he is credited for Building Fund.

1879.		
May 21.	By paid F. W. Putnam, Curator, by Vote of Trustees, 20th Inst.	\$948 00
July 15.	By paid F. W. Putnam, Curator, by Vote of Trustees, May 20 .	1,051 40
Nov. 28.	By paid F. W. Putnam, Curator, by Vote of Trustees, Nov. 25 .	448 00
1880.		
Jan. 6.	By paid F. W. Putnam, Curator, by Vote of Trustees, Nov. 25	1,000 00
Feb. 4.	By Balance in Cash	500 00
		<u>\$3,948 00</u>

Respectfully submitted

STEPHEN SALISBURY.

CAMBRIDGE, February 6, 1880.

I certify that I have examined the Report above, and I find that it is well vouched in receipts and payments, and duly stated, and that the Massachusetts 5 per cent. Specie Notes above described are in possession of Stephen Salisbury.

Attest, SAMUEL F. HAVEN, Auditor.

Feb. 4, 1880.

CASH ACCOUNT OF

F. W. Putnam, Curator,

PRABODY MUSEUM OF AMERICAN

Dr.

1879-80.

To Building Fund.

Cash received from Ex-treasurer, Stephen Salisbury . .	\$3,448 00
--	------------

To Museum Fund.

Cash received from Reports sold	\$3 85
Draft of E. Flint, paid by Ex-treasurer	300 00
Cash received from Ex-treasurer, Stephen Salisbury . .	8,676 19
	<u>8,980 04</u>

\$12,428 04

THE CURATOR.

In Account with

ARCHÆOLOGY AND ETHNOLOGY

		Cr.
		1879-80.
<i>By Building Fund.</i>		
For Window shades and fixtures	\$96 25	
Lining sink	5 50	
Copper, and work on roof	24 52	
Repairs on boiler	10 75	
400 Wooden trays	60 00	
Set of andirons	4 50	
Incidentals, and materials used	43 32	
Cases, stock and labor	1,911 60	
		\$2,156 44
<i>By Museum Fund.</i>		
For Explorations	3,243 56	
Collections and specimens purchased	716 50	
Set of Hayden's models and photographs	755 00	
Photographs and books	93 88	
Drawing, engraving and printing, Reports	1,010 90	
Appropriation to Mr. Carr, in Europe	300 00	
Fuel and gas	196 52	
Express, postage and telegraph	383 40	
Incidentals	174 30	
Salaries	2,750 00	
		9,624 00
By Balance, Cash on hand		648 14

 \$12,428 64

I have examined this account with its details, as per cash book, and find the same correctly cast and properly vouched.

THEODORE LYMAN.

Jan. 29, 1880.

INDEX. VOLUME II.

- Abbott, C. C., 13, 17, 18, 19, 20, 194, 206, 208, 211, 212, 214, 215, 218, 219, 484, 487, 489, 490, 496, 738, 739, 750.
- " " " explorations, 11, 198, 206, 212, 496, 715.
- " " " Flint chips, 506.
- " " " Report on discovery of implements in the Glacial Drift of New Jersey, 30.
- " " " Report on Palaeolithic Implements from Glacial Drift in New Jersey, 225.
- " Mrs. Julia O., 484.
- " Richard M., 212, 489, 738.
- Adams, W. H., 737, 743.
- " " " explorations, 720.
- Additions to Library, 20, 217, 492, 744.
- " " " Museum, 13, 207, 476, 732.
- Adobe houses in Utah, 198.
- Africa, arrows, 742.
- " " " crania, 477, 487.
- " " " human hair, 741.
- " " " notice of collections, 198, 733.
- " " " objects, 487.
- " " " Sonnulli arrows and objects, 741.
- Agassiz, A., 15, 17, 209, 210, 214, 733, 737, 750.
- " " " specimens from Brazil, 478.
- " " " " Peru, 8, 477.
- " " " L., 490, 491.
- " " " Brazilian collection, 478.
- Ainos, objects, 723.
- Alabama, mounds, 728.
- " " " stone implements, 210.
- " " " " from mounds, 212.
- Alabaster vases, Egypt, 490, 740.
- Alaska, coins and paper money, 217.
- " " " Indian necklace, 207.
- " " " vegetable products used by Indians, 216.
- Aldrich, A. F., 483.
- " " " Charles, 491, 740, 741.
- Algiers, Société Archéologique du Département de Constantine, 744.
- American Academy of Arts and Sciences, 213.
- Amulets, necklaces, ornaments, Egypt, 488, 490, 740, 741, 743.
- Anderson, Mr., 728.
- " " " W., 20.
- Andrews, E. B., 15, 19, 29.
- " " " explorations, 10.
- " " " " Report on exploration of Ash Cave, Ohio, 48.
- " " " " Report on explorations of mounds, Ohio, 51.
- Angell, H. N., 482, 737, 748.
- Animal bones and other remains, cave in Ohio, 19.
- " " " Bowling mounds, Tenn., 214.
- " " " caves Va., and Tenn., 15.
- " " " mound, Arkansas, 743.
- " " " " Bell Co., Ky., 209.
- " " " " Utah, 213.
- " " " shellheap, Florida, 490.
- " " " " Great Deer Island, Me., 214, 483.
- " " " shellheaps, New England, 17.
- " " " stone-graves, Tenn., 484.
- " " " Swiss Lakes, 490, 491.
- Animale, mummied, Egypt, 490.
- Animas River, New Mexico, ancient population, 530.
- Antiquity of man on Atlantic coast North America, 11.
- Antwerp, Annales de l'Académie d'Archéologie de Belgique, 745.
- Apache Indians, weapons, 14.
- Arabia, hieroglyphics, 741.
- " " " objects, 741.
- " " " pottery, 741.
- Arabic counting table, 737.
- Archæological explorations in Tennessee, account, 303.
- Architecture Central America and India, photographs, 724.
- Argillite flakes, N. Jersey, figs., 517, 518.
- " " " implements in New Jersey earlier than flint, 513.
- Arizona, fragments of pottery, 19.
- " " " models of Pueblos, 726, 743.
- Arkansas, bone implements, 742.
- " " " copper beads, 742.
- " " " explorations, 719.
- " " " mounds, 728, 739, 742.
- " " " pipe, 739, 742.
- " " " pottery mounds, 216, 739, 742.
- " " " shell ornaments, 742.
- " " " spindlewhorls, 742.
- " " " stone implements, 739, 742.
- Armor of Ancient Mexicans, 108.
- " " " Japan, 207.
- Arny, Governor, 216.
- Army Medical Museum, 14, 210, 221.
- " " " " portrait of the late Prof. Wyman, 9.
- Arrows, Africa, 742.
- " " " Amazon Indians, 491.
- " " " Cheyenne Indians, 14.
- " " " Comanche " 488.
- " " " Sandwich Islands, 15.

- Bowers, S., 20, 215, 216.
 Bowling, Miss G., 203, 310.
 " mounds, Tennessee, description of, 310.
 Brackenridge, notices of Seltzertown mound, 470.
 Bransford, Dr., 196, 211.
 Brass arrowpoints and ornaments, Indian grave, Revere, Mass., 732.
 " ring, Indian grave, N. Y., 743
 Brazil, Agassiz Collection, 478.
 " notice of collections, 191.
 " objects, 211, 491.
 Bread, Nez Percés Indians, 14.
 Brinton, D. G., 749.
 British Columbia, mask, 206.
 Broca, P., 730, 745, 746.
 Brodhead, L. W., 487, 737.
 Bronze celt, Brittany, 490.
 " figures, Egypt, 740.
 " " Peru, 8, 16.
 " fragment of blade, Mycenæ, 488.
 " implements and ornaments, Austria, 490.
 " " Denmark, 400.
 " " Ireland, 490.
 " " Italy, 490.
 " " Lake Bourget, 491.
 " " Seine, at Paris, 490.
 " " Sweden, 490.
 " knives, Peru, figs., 289.
 Brooks, C. W., 495.
 Bryant, Miss P., 209.
 Buchanan, J. H., 204.
 " survey of moundbuilders' town, 339.
 Bucklin, Peruvian collection, 724.
 Building for the Museum, Committee, 5, 6.
 " " description and cost, 185.
 " " " plans 5, 6, 188.
 " " " Report of Committee, 185.
 Busk, G., 730, 748.
 Butler, J. D., 217.
 " J. P., 739, 740.
 Cabot, L., 743.
 " S., 743.
 " W. R., 215.
 Cahokia mound, account, 470.
 " " figures, 472, 474, 475.
 " " models, 473, 736.
 " " objects, 485.
 Cairns, Marion Co., Kansas, 718, 738.
 California, baskets made by Indians, 467, 486, 523.
 " beads of shell, stone, glass, 215, 486.
 " bone implements, 486.
 " crania, measurements, 223, 497.
 " European objects from graves, 260, 216, 486.
 " explorations, 10, 200, 466.
 " fishhooks of shell, 486.
 " hook-like implement, 20.
 " Islands of southern, collections, 190, 200, 216.
 " manufacture of soapstone pots by former Indians, 258.
 " manufacture of stone mortars by former Indians, 264.
 " manufacture of stone pipes by former Indians, 268.
 California, manufacture of "weights for digging-sticks" by former Indians, 263.
 " ornaments of stone, shell and teeth, 486.
 " paint from graves, 496.
 " pipes, 486.
 " plants used by Indians, 19, 523.
 " pottery made by present Indians, 467, 486, 521.
 California, shellheaps, 486.
 " soapstone pots, 486.
 " soapstone quarry on Santa Catalina Island, 263.
 " southern, collection, 196.
 " stone dishes, 486.
 " stone implements, 486.
 " whistles, 486.
 Cambridge, Antiquarian Society, 494, 750.
 " Harvard College Library, 748.
 " Medical Faculty of Harvard University, 749.
 " Museum of Comparative Zoology, 14, 209, 214, 482, 490, 491, 495.
 Campbell, S. B., 209.
 Canada, articles from shellheaps, 17.
 " model of sled used by Indians, 19.
 " pipes made of stone, 488.
 " pottery, 14.
 " stone implements, 18.
 Cannibalism, evidences of in shellheaps of Maine, 186.
 Cannibal's fork, Fiji, 487.
 Canoe, model, Sandwich Islands, 19.
 Canoes used by ancient Mexicans, 158.
 Cap from Peruvian Mummy, fig., 280.
 Capt. Jack's comb, 14.
 Carr, A. W., 488.
 " L., 15, 24, 27, 28, 208, 209.
 " " appointed Assistant Curator, 6.
 " " European trip, 729.
 " " explorations, 11, 75, 208, 209.
 " " measurements of crania from California, 497.
 " " observations on crania from stone graves in Tenn., 361.
 " " Report on Additions to Museum and Library, 13.
 " " Report on Crania.
 " " study of crania, 476.
 " " voluntary services, 8, 479.
 " " Jr., assistance in the Museum, 194, 479.
 " " Jr., measurements of crania, 221.
 " Mrs. J., 211.
 Cartallhac, E., 745.
 Carus, C. G., 24.
 Caryatid, Italy, 743.
 Cary, T. G., 13, 195, 207, 208, 209, 215, 479, 488, 495.
 Case, T., 750.
 Cases in the new building, 480.
 Cast of a "phallus," original from mound in Tenn., 216.
 Casts of Grotesque Masks, Mexico, 14.
 Cave-dwellings in Utah, 269.
 Caves, Claiborne Co., Tenn., 15, 200.
 " Cumberland Gap, cranium, 27.
 " Cumberland River, Tenn., objects, 212, 482.
 " Hocking Co., Ohio, objects, 19.
 " " " Report on Exploration, 48.
 " Lee Co., Va., 15, 209.
 " " " cranium, 27.

- Caves, Nicaragua, inscriptions, 469.
 " " objects and crania, 489, 740.
 " " objects from, arranged, 737.
 " " Ohio, method of formation, 46.
 " " Rome, Tenn., objects, 213.
 " " Syria, stone implements, 215.
 " " Utah, notice, 193.
 " " objects, 213.
 Central America collections, 193.
 " " explorations, 468.
 " " objects arranged, 739.
 " " perforated stone, 214.
 " " photographs of architecture, 734.
 " " stone pan, carved, 207.
 Central Americans, probable remote origin in the San Juan district, 558.
 Ceri, Ignazio, 216.
 Cervantes, A. E., 735.
 Challin, Paul du, articles collected in Africa, 477.
 Chambered mounds in Clay Co., Mo., 717, 738.
 Charcoal, Pompell, 741.
 Charms, Cyprus, 743.
 " " Greece, 743.
 Cheney, L. H., death of, while exploring Ely Mound, 77.
 Chenopodium album, seed from cave in Ohio, 49.
 Cherokees, burial customs, 82, 83.
 " " council-house on mound, 76.
 Cheyenne Indians, arrows, 14.
 " " stone implements, 744.
 Chicago, Academy of Sciences, 494.
 Chick, E. E., appointed janitor, 479.
 " " assistance in Museum work, 479, 730.
 Chiefs among Ancient Mexicans, 119.
 Children buried under floors of houses of Moundbuilders, 350.
 Chili, photographs of Indians, 485.
 Chinese calculating machine, 207.
 " " coins, 208.
 " " Department, Centennial Exhibition, photographs, 215.
 " " figures, 723, 744.
 " " grotesque animal in porcelain, 215.
 " " lady's foot, artificially deformed, photograph, 206.
 " " pottery, 740.
 " " silk culture, sketches, 206.
 " " weapons, 211.
 Chippewa Indians, photographs, 13.
 Choctaw Indian rattle, 14.
 Chungke, game of, 92.
 " " stone, fig., 91. [494, 751.
 Cincinnati, Society of Natural History, Clarke, H., 218.
 " " R., 24.
 " " S. C., 487.
 Cliff-dwellings, models, 737, 743.
 " " house Colorado, objects, 14, 740.
 Clogston Collection, 478, 487.
 " " W., 488.
 Cloth from mound in Ohio, 18.
 Clothing of Ogalalla Sioux Indians, 19.
 Cloth, Sandwich Islands, 19.
 " " tapa and twine, Fiji, 487.
 Clubs, Fiji, 487, 742.
 " " grooved stones with handles, Sioux Indians, 214.
 Club with perforated stone head, New Britain Island, 741.
 Club with perforated stone head, Queensland, 483.
 Coal bead, Cave, Lee Co., Va., 15.
 " " Haunted Cave, Ky., 15.
 " " implements and ornaments, stone-graves, Tenn., 484, 732.
 " " pin, Turner's Mound, 15.
 " " worked, Tennessee River, 212.
 Cochrane, J. H., 203, 213.
 Coffinberry, W. L., 20.
 Coil pottery of Californian Indians, 467.
 Coins and paper money from Alaska, 217.
 " " China, Japan, etc., 193, 208.
 " " Malta, 741.
 Collett, J., 749.
 Colman, H., 735.
 Colorado, Ancient Stone Pueblo, description, 478, 743.
 " " carved stone, 13.
 " " Cliff-dwellings, models, 737, 743.
 " " crania, 482.
 " " Indian grave, 482.
 " " mound, 483.
 " " notice of human skull in the loess, 257.
 " " objects from Cliff-house, 740.
 " " pottery, 19, 483, 732, 741.
 " " stone implements, 485.
 Columbia Valley, the seed land of the Gunowanian family, 556.
 Colyer, V., 216.
 Comanche arrow, 488.
 " " Indian, cranium, 212.
 Comb, Damascus, 743.
 " " Modoc Indian, 14.
 " " Peru, fig., 230.
 " " Somauli, 741.
 Committee on Museum Building, 5, 6, 185.
 " " to confer with Corporation of Harvard College, 5.
 Conant, A. J., 485.
 Cone of clay, Athens, Greece, 210.
 Connatt mounds, Ohio, 19, 56, 62, 71.
 Cooke, C., 17, 18, 29.
 Cooper, Judge, 735.
 Cooking pots of soapstone, manufacture by Indians of California, 258.
 Cope, E. D., 23.
 Copper and wood ear-ornaments from mound in Tenn., 483.
 " " beads, mound, Arkansas, 742.
 " " " " Dakota Ter., 742.
 " " " " Illinois, 737.
 " " " " Ohio, fig. 60.
 " " " " mounds, Ohio, 60, 66, 488.
 " " " " Vermont, 214.
 " " celt, Lewiston, Me., 488.
 " " from Indian grave, Ky., 15.
 " " implement, 743.
 " " instrument, mound, Ohio, fig., 61.
 " " native, Lake Superior, 214.
 " " ornament, grave, Va., 209.
 " " ornamented belt, Indian grave, Harpawell, Me., 215.
 " " ornaments, mound, Ohio, 19.
 " " " " " fig., 72.
 " " " " Peru, 490.
 " " " " stone-graves, Tenn., 732, 735.
 " " tweezers, Peru, 480.
 Corea, coins, 208.
 Corn cobs, cave in Ohio, 19.
 " " Cliff-house, 740.
 " " grave, Ancon, Peru, 211.
 " " graves, Madisonville, Ohio, 741.
 " " mound, Dakota Territory, 743.

Cornice, Greece, 740.
 Costa Rica, stone implements, 14.
 Cortes, siege of Mexico, sketch of, 153.
 Cowan, F., 749.
 Cowing, Mr., 741.
 Cox, E. T., 25.
 Cradle-board, Pah Ute Indians, 313.
 Crania, see Human Crania.
 Craniological measurements, 730.
 Cressy, N. S., 20, 747.
 Crockett, S., 204, 339, 735.
 Cross, E., 203, 212, 308.
 Curator, Cash Account, 754.
 " Reports, 7, 191, 480, 715.
 " " adopted, 6, 176, 465, 714.
 Curtiss, J. N., resignation as janitor, 479.
 Curtiss, E., 203, 212, 214, 215, 222, 483,
 483, 484, 487, 488, 732, 736,
 739, 742.
 " " explorations, 480, 717.
 Cushing, C., Mexican collection, 477.
 Cyprus, lamp, 743.
 " photographs of pottery, 13.
 Dakota Territory, bone implements, 742.
 " " Cheyenne stone imple-
 ments, 744.
 " " copper beads, 742.
 " " corn from mound, 742.
 " " explorations, 720.
 " " Indian graves, 14.
 " " Indian pottery, 741.
 " " mounds, 728, 742.
 " " pottery and other ob-
 jects, mounds, 742.
 " " Sioux implement, 744.
 Dalrymple, E. A., 741.
 Daniell, H. W., 216.
 Davenport, Academy of Natural Sciences,
 23, 217, 492, 493.
 Davis, H., 489.
 Dawkins, W. B., 24, 748.
 Dawson, G. M., 748.
 " J. W., 494, 748.
 De Costa, B. F., 23.
 De Grasse, F., 734.
 Deer's Antler, mound, Lee Co., Va., 209.
 " teeth, mound in Utah, 19.
 Delaware, cast of stone pipe, 485.
 " stone implements, 737.
 " " Water Gap, formerly inhabited
 by Shawnees, 715.
 Denmark, bronze implements, 490.
 " stone implements, 488, 490.
 Deposit of stone implements, Ill., 18, 210.
 " " " Virginia, 211.
 " " " New York, 722.
 Derby, C., 487.
 " " Fiji Island collection, 478.
 Dighton Rock, photograph, 13.
 District of Columbia, ancient soapstone
 quarry, 478, 526.
 " " " soapstone pots, 488.
 " " " stone implements,
 491, 732.
 Dixwell, J., 195, 200, 211, 218.
 " Mrs. J., 195, 211.
 Doors in ancient Pueblo, peculiar, 545.
 Douglas, H. T., 211, 484.
 Dozier, Mr., 734.
 Dress, Ancient Mexicans, 100.
 " Fans, Africa, 487.
 " Iku, Fiji, 487.
 " Mandingos, Africa, 487.
 " New Guinea, 482.

Dyer, D., 721.
 " J., notice of burial vault under
 stone mound, Ohio, 721.
 DuChailu, P. F., 487.
 Ear-ornaments, copper and wood, mound,
 Tenn., 483.
 Ear-ring, Fiji, 487.
 Earth-wall and ditch, Lancaster, Ohio, 51.
 " works and circles, Athens Co.,
 Ohio, 55.
 " " Ohio, representations, 731.
 " " Tennessee, plan of, 339.
 East Indies, photographs of an idol, 17.
 Ecuador, pottery face, 215.
 Edmonds, A. H., 732.
 Edmonson, J. B., 215.
 " Mr. and Mrs., 203.
 Egypt, alabaster vases, 490, 740.
 " amulets and ornaments, 488, 490,
 740, 741.
 " bronze figures, 740.
 " collection, 476, 723, 740, 741.
 " hair, 741, 743.
 " hieroglyphics, 490, 732, 740, 741.
 " lamps, 490.
 " leather shoes, 741.
 " mummied animals, 490.
 " " feet and hands, 490.
 " " fish, 209.
 " mummy cloth, 490, 741.
 " Pickering Collection, 723, 741.
 " pottery, 490, 471.
 " scarabaei, 490, 740, 741.
 " Summer Collection, 723, 743.
 " tablet of Rameses, 723.
 " Wells Collection, 723, 740.
 " wooden carvings, 490, 743.
 Egyptian collection arranged, 723.
 Eilenbeis, T., 14.
 Eldridge, S., 219.
 Ellig, H. L., 20, 210.
 Ely Mound, Lee Co., Va., 15, 75, 209.
 " " " " crania 27, 38.
 Engelmann, G. J., 17, 485.
 England, photographs of palaeolithic im-
 plements, 215.
 " stone implements, 740.
 Eskimo harpoons, 742.
 Estufas in ancient Pueblos, 547.
 Etruscan sarcophagi, 737.
 European collection, 470.
 " objects, Indian grave, Ux-
 bridge, Mass., 483.
 " " Santa Catalina Isl.,
 Cal., 486.
 Evans, J., 720, 740.
 Everett, O. H., 737.
 " P. L., 195, 208.
 " W., 484.
 Ewing, Gen., 216.
 Fan, Arabia, 741.
 " Hawaiian Islands, 214.
 Farquharson, R. J., 748.
 Feather head-dresses and ornaments,
 Amazon Indians, 491.
 " ornament, Peru, fig., 281.
 Fiji Islands, Derby Collection, 478.
 " " human hair, 742.
 " " model of boat, 15.
 " " musical instruments, orna-
 ments, weapons, pottery,
 cloth, etc., 18, 19, 487, 742.

- Fiji Islands, yagona bowl, 741.
 Firenze, Società Italiana di Antropologia e di Etnologia, 20, 23, 218, 485, 744.
 Fire-stick, Somaui, 741.
 Fish, mummied, Egypt, 209.
 Fishhooks, Fiji, 488.
 " Puget's Sound, 487.
 " shell, Santa Catalina, Cal., 486.
 Fishing seine, Queensland, 482.
 Fishline of kelp, Puget's Sound, 487.
 Flint, ancient excavations for, Ohio, 54.
 " chips, paper on, 506.
 " rock-house, Ky., 15.
 " E. A., 214, 490.
 " " Peruvian collection, 477.
 " E., 486, 492, 741.
 " explorations, 468, 716.
 " method of procuring by Indians of Texas, 719. [508.
 " workers' workshops in New Jersey, Florida, animal bones from shellheap, 490.
 " burial mounds at Santa Fe Lake, Cade's Pond, etc., 487.
 " crania, 477, 487.
 " " from mounds, 487, 737.
 " European articles often found in mounds, 468.
 " explorations, 467.
 " human bones, burnt, mounds, 487.
 " " mounds, 735, 741.
 " " shellheap, 490.
 " " cranium with incised lines, 735.
 " Map of prehistoric stations, 722.
 " mounds, 483, 723, 735, 736.
 " pottery, 735.
 " " mounds, 467, 483, 487.
 " " shellmound, 487, 741.
 " " shell beads from mounds, 736.
 " " chisels, 735, 741.
 " skulls as cinerary urns, 467.
 " stone implements, 735, 741.
 " " from burial mounds, 487.
 " " tube from mound, 735.
 " Wyman Collection from shell-heaps, 194, 214.
 Flower, W. H., 496, 730.
 Force, M. F., 495.
 Fortification, Merom, Ind., cranium, 29.
 " " objects, 18.
 Foster, J. W., 18.
 France, bronze implements, 490.
 " glass vessel, 490.
 " lamps, 490.
 " pottery, 490.
 " stone beads from the Seine, 490.
 " implements, 490, 740.
 Freed, A., 50.
 Frey, S. L., 495, 748.
 Gadé, G., 24.
 Gambling implements, Mohave, 17.
 Gauwanian family, its seed land the valley of the Columbia, 556.
 Garman, S. W., 18, 209, 214, 215, 483, 492, 735.
 Garments, Aymara Indians, Peru, 211.
 Gass Tablets, mound in Iowa, 208.
 Gatschet, A. S., 494.
 Gecks, A., 741.
 Genève, Société d'Histoire et d'Archéologie, 746.
 Georgia, mounds 728.
 " stone implements, 487, 739.
 Gibbs, Sec'y of State of Tennessee, 203.
 Gillman, H., 17, 487.
 " explorations, 467.
 Gilson, Mr., 486.
 Glacial deposit, stone implements, 17.
 " drift, explorations 11, 12.
 " " New Jersey, Report on 30.
 " " " im-
 plements from 225.
 " " stone implements, 11.
 Glass beads, graves, San Clemente, Santa Catalina, 216, 489.
 " " cairn in Kansas, 718, 739.
 " " Indian grave, Mass., 484.
 " " New Jersey, 484.
 " " Penn., 490, 737.
 Glass, Egypt, 741.
 " F. S., 735.
 " Italy, 491.
 " Syria, 490.
 " vessel, 743.
 " " France, 490.
 " " Greece, 490.
 Godshall, C. L., 213.
 Gold ornaments, Bogota, 20.
 " " New Grenada, 9.
 " " Tiahuanaco, 490.
 Gordon-Cumming, Mr., 739.
 Government of Ancient Mexicans, 557.
 Gower, Mr., 736.
 Gravel beds, Trenton, N. J., their age, 44.
 Graves, Mr., 737.
 Gray, A., 14.
 " " plans for Museum Building, 5.
 " J. B., 490.
 Greece, bronze fragment, 488.
 " charms, 743.
 " earthen cone, 210.
 " glass vessel, 490.
 " lamps, 490.
 " pottery, 488, 490, 743.
 " sculptured head, 740.
 Green, C. M., 735.
 " J. C., 745.
 " S. A., 25, 218, 483.
 Greenland, harpoon points, 743.
 Guiana, clubs, 211.
 Guild, C. H., 743.
 Guimet, E., 24.
 Hackenberg, G. P., 14.
 Hair brush, Fiji, 488.
 " comb, Fiji, 487.
 Haldeman, S. S., 747.
 " " Notice of stone im-
 plements on Islands, Susquehanna River,
 235.
 Hall, T., 737.
 Hamburg, Museum Godeffroy, 219.
 Hammond, C., 743.
 Handelsmann, H., 25.
 Hardy, M., 214, 222, 483.
 " " account of, and collection
 from shellheaps in Malue, 196, 197.
 Hargrove, Rev., Mr., 203.
 Harrison, A. M., 13.
 Hart, C. H., 219.
 " G., 735.
 Hartt, C. F., notice of death, 192.
 Harvard College Corporation, agreement
 on site for Building, 5.
 Haskins, J. P., 739.
 Haunted Cave, Ky., 15.
 " " human bones, 209.
 Haven, S. F., report of as auditor, 167,
 457, 706, 753.

- Hawaiian Islands, crania, 477, 487.
 " " objects, 15, 19.
 " " stone implements, 487, 490.
 Hawley, C., 219.
 Hayden, C. B., 211.
 " L. S., 750.
 Hayes, Mrs., 735.
 Haynes, H. W., 745.
 Hayti, stone implements, 18.
 Headress, Fiji Islands, 19.
 Heco, J., 207, 209.
 Hematite ball, Tennessee, 212.
 " implement, Nashville, Tenn., 212.
 " implements, Ohio, 488.
 Henderson, J. G., 730.
 Henshaw, H. W., 736.
 Heritage, J. D., 489.
 Hieroglyphics, Egypt, 490, 732, 740, 741.
 High Rock Spring, Saratoga, oak tree
 under, 739.
 Hild, F., 17.
 Hilder, F. F., 732, 749.
 Hill, H. H., 215.
 Hindostan, weapons, 211.
 Hinkley, H., 19, 208.
 Hitchcock, E., 214.
 Hobbs, O., 211.
 Hodge, Mr., 736.
 Hoffman, W. J., 14.
 Hohenleuben, Vongtändischen Alter-
 thumsforschenden Vereins, 23, 747.
 Holmes, E., 489, 738.
 " W. H., 14.
 Honduras, pottery, 486.
 Hooe, S., 211.
 Hook-like implement of steatite, graves,
 Santa Barbara, 20.
 Hooper, E. W., Sec'y Corporation of Har-
 vard College, 6.
 Hopkins, G. N., 14.
 Horn sockets, Swiss Lakes, 491.
 " spoon, Pah Ute Indians, 213.
 Horse accoutrements, 488.
 Horton, S. M., 14.
 Houses of the Moundbuilders, 347.
 Howell, A., 743.
 Howland, H. R., 749.
 Hugo, L., 23.
 Hulse, E., 215.
 Human arm, tattooed, Ancon, Peru, 490.
 " bodies, Ancon, Peru, 209.
 " " graves in Peru, position
 of, 277.
 " " mummies, Chacota, Peru,
 216.
 " bones, Ash Cave, Ohio, 19.
 " burnt, chambered mounds,
 Mo., 738.
 " " mounds, Florida, 487.
 " " " Ohio, 19,
 50, 62, 64, 67, 68, 69, 72, 73.
 " " cave, Kentucky, 209.
 " " Lee Co., Va., 15.
 " " Luray, Va., 732.
 " " Nicaragua, 489, 740.
 " " Ohio, 16, 48.
 " " Tennessee, 15.
 " " Florida, 490, 735.
 " " Islands San Clemente and
 Catalina, 216.
 " " Luke Mendota, Wis., 491.
 " " Lee Co., Va., 492.
 " " Maine, 483.
 " " Massachusetts, 18, 208.
 " " mound, Arkansas, 739.
 " " " Florida, 741.
 Human bones, mound, Illinois, 17.
 " " " Indiana, 18.
 " " " Iowa, 18.
 " " " Kentucky, 209.
 " " " New York, 741.
 " " " Ohio, 15, 19, 67, 68,
 69, 743.
 " " " Tennessee, 311.
 " " " Utah, 213.
 " " " Virginia, 77, 78, 81.
 " " New York, 483.
 " " Nicaragua, 486.
 " " shellheap, Florida, 490.
 " " " Maine, 214, 483.
 " " " under, Mass., 18, 29.
 " " stone-graves, Tenn., 213,
 214, 482, 486, 732.
 " " Tennessee, 482, 486.
 " " Virginia, 492.
 " " crania, Africa, 477, 487.
 " " Californian, measure-
 ments, 225, 497, 498, 499,
 500, 501, 502, 503, 504, 506.
 " " casts, 20, 487.
 " " cave, Kentucky, 209, 492.
 " " " Nicaragua, 490, 740.
 " " " Ohio, 29.
 " " " Tenn., 27, 212, 482.
 " " " Virginia, 27, 492.
 " " Colorado, 482.
 " " " in the loess, 257.
 " " Comanche, 212, 221.
 " " containing burnt bones,
 Florida, 467, [737].
 " " Florida, 477, 487, 490, 735.
 " " Hindoo, 477.
 " " India, 487.
 " " Indiana, 29.
 " " Iowa, 210, 489.
 " " Kansas, 738.
 " " Kentucky, 209, 492.
 " " Kneeland Collection, 477.
 " " Maine, 222, 483.
 " " Massachusetts, 18, 28, 208,
 221, 483, 487, 735.
 " " Maui, 477, 487.
 " " measurements, 27, 28, 29,
 221, 222, 223, 224, 368, 373,
 378, 475, 497, 498, 499, 500,
 501, 502, 503, 504, 505.
 " " Mexico, 717.
 " " mound, Arkansas, 739.
 " " " Florida, 467, 487.
 " " " " fragment
 carved, 735.
 " " " Indiana, 18, 29.
 " " " Iowa, 210.
 " " " Kentucky, 209.
 " " " Missouri, 738.
 " " " Ohio, 215.
 " " " Tenn., 213, 214, 361.
 " " " Utah, 221.
 " " " Virginia, 27, 28.
 " " " Wisconsin, 206, 221.
 " " New England, 477.
 " " " Jersey, 484, 738.
 " " " gravel, 466.
 " " " York, 485.
 " " Nicaragua, 486, [487].
 " " North American Indians,
 Ohio, 735.
 " " Pah Ute, 222.
 " " Pennsylvania, 490, 738.
 " " Peru, Blake Collection,
 478, 485.
 " " " figs., 299, 300, 301, 302.

Human crania, section, abnormal position of foramen magnum, 20.
 " " Seminole, 490.
 " " Shawnee, 488.
 " " shellheap, Maine, 214, 483.
 " " Sioux, 210, 231, 737.
 " " stone-graves, Tenn., 212, 213, 381, 483, 484, 485, 733.
 " " stone-graves, Tennessee, observations on, 361.
 " " stone-graves, Tennessee, tables of measurements, 234, 368, 373, 378.
 " " stone-graves, Tennessee, two forms of, 316.
 " " Tennessee, 19, 27, 29, 207, 212, 214, 216, 222, 482, 483, 484, 486, 488.
 " " Virginia, 492.
 " feet and hands, Egypt, 490.
 " femur, fractured and united, stone-grave in Tenn., 486.
 " figure carved in stone, 20, 740.
 " " Japan, 742.
 " hair, 738, 741, 742, 743.
 " head carved in stone, cave in Acapulco, description of, 307.
 " head in stone, Greece, 740.
 " " " New Jersey, 739.
 " " from Peru, fig., 308.
 " tibia, remarkable thickness of in a child, from stone-grave in Tennessee, 350.
 Humphreys, J. T., 740.
 Hunt, R. T., 738.
 Hunter, W. C., 195, 208.
 Huntington, C. S., 216.
 Idol, East Indies, photograph of, 17.
 Idols, Nicaragua, 716, 740, 741.
 Illinois, bone implements, 743.
 " burnt bones, 743.
 " carved stone pipe, 211.
 " copper beads from mound, 737.
 " deposit of stone implements, 210.
 " explorations of mounds in Spoon River valley, 720.
 " model of Cahokia mound, 736.
 " mounds, 485, 728, 737, 743.
 " objects from mounds, 18, 485, 743.
 " photograph of human figure in stone, 20.
 " pottery, 485, 743.
 " refuse heap, 743.
 " stone implements, 18, 485.
 Implements, weapons, models of boats, Fribourg Islands, 208.
 " South Sea Islands, 211.
 " made of teeth and horn, Omori shellheap, 216.
 Imperial University, Tokio, 479.
 " collection from Omori shellheap, 196.
 India, crania, 477, 487.
 " photographs of Architecture, 724.
 " Pickering Collection, 723.
 Indian belt, grave, Harpwell, Me., 215.
 " implements, 211.
 " necklaces of beads and claws, 211.
 " snow-shoes, 211.
 Indiana, ancient fortifications and mounds at Merom, 18.
 " carved stone, 217.
 " cranium, 29.
 " mounds, 728.

Indiana, pottery, 217, 488.
 " State Archaeological Assoc., 23.
 " stone implements, 18, 210, 211, 215, 485.
 Indians, Amazon River, objects, 491.
 " Canada, model of sledge, 19.
 " casts of heads, 217.
 " Chili, photographs of, 485.
 " Mexico, objects from, 716, 733.
 " Navajo, blankets, sashes, 485.
 " Ogalalla Sioux, clothing and whip of, 19.
 " Pah-Ute, articles made by, 213.
 " southern California, baskets and pottery, 486.
 " " food, 19.
 " Utah, bow and arrows, 19.
 " vegetable products used by, 210.
 " Venezuela, ornaments, 737.
 Ingersoll, Mrs. E., 484, 740.
 Irwin, B. J. D., 14.
 Inscribed rocks, Bellows Falls and Brattleboro, photographs, 214.
 " " Nicaragua, copies, 489.
 " " Peru, 214, 490.
 " stones, mound in Iowa, photographs, 308.
 Iowa, articles from mounds, 17.
 " cranium from, 489.
 " photographs of " Gass tablets," 209.
 " mounds in, 728.
 " photograph of cranium, mound, 210.
 Ireland, bronze implements, 490.
 " stone implements, 490, 740.
 Iron and other metals, graves on islands of San Clemente and Santa Catalina, 216.
 " implements, Massachusetts, 18.
 " tomahawk, Sudbury, Mass., 483.
 " " Tennessee, 738.
 " " modern Indian, 211.
 " " New York, 741.
 " weapons, Italy, 490.
 Italy, bronze implements, weapons, 490.
 " caryatid, 743.
 " glass objects, 491, 743.
 " iron weapons, 490.
 " lamps, 490.
 " mosaic from Rome, 491.
 " pottery, 216, 490, 491.
 " Roman brick, 743.
 " sarcophagi, 737.
 Jackson, J. B. S., 215, 740.
 Jade knife, Nicaragua, 492.
 Japan, books, 206, 479.
 " chain armor, 207.
 " chessmen, 207.
 " coins, 208.
 " objects from 723
 " shellheap, objects, 196, 216.
 " tobacco, 216.
 Jasper-flakes, New Jersey, figs., 519.
 Jenks, E. T., brackets and locks for new caes., 480.
 " J. W. P., 737. [492]
 Johnson, C. B., 15, 27, 77, 78, 208, 209, 210.
 " J. Q. A., 214.
 " J. K., 738.
 Jones, C. C., 493.
 " J., 18, 736.
 " " archaeology of Tennessee, 305.
 Kansas, bone implements, 738.
 " explorations, 717.

- Kansas**, burial mound explored, 718.
 " burnt human bones, 738.
 " calms, 718, 738.
 " crania, 738.
 " glass beads, 738.
 " mounds, 728, 738.
 " pipes, 738.
 " shellheap, 738.
 " shell ornaments, 738.
 " stone implements, 738.
- Kentucky**, burnt bones and stone implements from mound, 208, 209.
 " cast of carved stones, 215.
 " caves, 15, 209.
 " crania, 492.
 " explorations, 11.
 " flint implement 6 ft. below surface, 743.
 " human bones, cave, 209.
 " " " mound, 209.
 " " " rock-house, 209.
 " Indian grave, 15.
 " mounds, 15, 209, 728, 737.
 " pipes, 15, 484, 737.
 " pottery, 488.
 " rock-house, 15, 209.
 " stone implements, 15, 18, 209, 485, 735, 738.
 " worked bone, 209.
- Kerr**, W. C., 733.
Kervey, H. R., 486.
Kickapoo Indian pottery, 743.
Kiel, Naturwissenschaftlichen Vereins, 492.
Kimball, F. W., 211.
 " J. P., 14.
King, M., 495, 751.
Kirk, I. S., 738, 739.
Knapp, Mrs., 739.
Kneeland, S., 477, 487, 490, 733, 741, 748.
Knight, C. H., 742.
 " F. P., 215, 744.
 " figures from China, 723.
- Knowles**, J. S., 211.
Kocals, A., description of Old Stone fort, Manchester, Tenn., 720.
Königsberg, Alterthumsgesellschaft, 217.
- Labrador**, pottery tiles, 737.
- Lake Superior**, articles from the Ojibwa Indians, 17.
 " " hammer-stones, 17.
 " " native copper, 214.
 " " stone implements, 210.
- Lamps**, Egypt, France, Greece, Italy, Tyre, 490.
- Lane**, E., explorations, 721.
- Larkin**, F., 741.
 " " explorations, 722.
- Lasater**, Mr., 738.
- Latimer**, G., 14.
- Leather** with copper beads, School-house mound, Ohio, 65, 66.
- Le Baron**, J. F., 741.
 " " map of prehistoric stations in Florida, 723.
- Leggings** of buckskin, 733.
- Legrand**, Dr., 746.
- Leipzig**, Bericht des Museums für Völkerkunde, 25, 747.
- Le Plongeon**, A., 486.
- Library**, additions to, 9, 217, 478, 725.
- Lily** bulbs used for food by Indians of Southern California, 19.
- Lindsley**, J. B., 208.
- Lindsley**, Mrs. H., 204, 339.
 " Mrs. N. L., 204, 339.
- Link**, B., 483.
- Lintel** of wood, ruined Pueblo, fig., 546.
- Little**, N., 210.
- Liverpool**, Literary and Philosophical Society, 23, 217, 494, 748.
- London**, Aborigines Protection Soc., 24.
- Loring**, C. G., 740.
- Louisiana**, mounds, 728.
 " stone implements, 18.
- Lowell**, J. A., Jr., Egyptian tablet, 733.
- Lowthorp**, W. T., 489.
- Lupton**, N. T., 203, 212.
- Lyman**, T., 739.
 " " elected auditor, 714.
- Maack**, D., 487.
- Madison**, Wisconsin Academy of Science, Arts and Letters, 748.
- Madisonville** Literary and Scientific Society, 735, 741, 749.
- Madrid**, Museo Arqueologico, 217.
 " Sociedad Geografica, 23.
- Mahoney**, D. A., 17.
- Maine**, animal bones, shellheaps, 214, 483.
 " bone implements, shellheaps, 214,
 " crania, 477, 483.
 " " shellheaps, 214, 222, 483.
 " human bones, shellheaps, 214, 483.
 " Indian belt, copper ornaments,
 " grave, 215.
 " pottery, shellheaps, 483.
 " shellheap, Damariscotta, 17.
 " " Great Deer Isl., 196.
 " " Goose Island, 17.
 " " objects, 17, 214, 483.
 " State Board of Agriculture, 495.
 " stone implements, 13, 742.
- Maize**, probable origin in the San Juan district, 551.
- Malay** weapons, 211, 216.
- Mann**, remains of in Glacial Drift, 11.
- Mann**, C., 217.
 " H., 15.
 " Mrs. H., 15.
- Map** of a town of mound-builders, Tenn., 339.
- Marshall**, Mr., 735.
- Marsh**, O. C., 211.
- Maryland**, stone implements, 210, 742.
- Mask**, British Columbia, 208.
 " of stone, Palenque, 213.
- Massachusetts**, brass arrowheads from Indian grave, 733.
 " carved stone, 210, 486.
 " crania, 18, 28, 29, 208, 221,
 " 477, 483, 487, 735.
 " cranium from under shellheap, 18.
 " human remains, 18, 208.
 " Indian grave, Revere,
 " objects, 483, 484, 733.
 " Indian grave, Uxbridge,
 " objects, 483.
 " iron implements, 18.
 " " tomahawk, 483.
 " metal button with Indian skeleton, 209.
 " pipes, 73, 483, 484, 733.
 " pottery, 484.
 " shellheaps, 17.
 " soapstone pot from Indian grave, fig., 273.

- Massachusetts, stone implements, 13, 17, 18, 19, 207, 208, 209, 216, 483, 484, 487, 488, 724, 737, 739, 740, 742, 743.
- " stone mortar, 215.
- Mat from cliff-house, Colorado, 14.
- Mats made by the Fans, Africa, 487.
- Matthews, C. L. S., 15.
- " Rev. Mr., 203.
- Matting, cedar-bark, Puxet's sound, 487.
- Maxwell House, proprietors, 203.
- Mayer, B., 737.
- " Collection obtained, 724, 737.
- McAdams, W., 749.
- McAllister, W., 739.
- McChesney, C. E., 744.
- " J. D., 750.
- McClure, W. P., 486.
- McGuler, H., 748.
- McGuire, J. D., 742.
- McNair, A. B., 740.
- " objects from Egypt, 723.
- Meigs, J. A., 24, 748.
- Mendoza, D. G., 746.
- Menteith, J. B., 216.
- Merrill, S., 215. [Col., 183.
- Metate and stone, mound, La Platte Co.,
- Metz, C. L., 735, 750.
- Mexican collection arranged, 724.
- " tribes derived from the San Juan district, 553.
- Mexicans, ancient, a free military democracy, 161.
- " on the social organization of ancient, 475.
- " tenure of land and customs with respect to inheritance among, 385.
- " war and warfare of, 65.
- Mexico, antiquities, 716, 734.
- " cast of Palenque Tablet, 742.
- " cave, objects, 734.
- " copper etc., 730.
- " crania, 716, 734.
- " explorations, 490, 716, 733.
- " horse accoutrements, 488.
- " Indian articles, 211, 716, 733.
- " Mayer Collection, 724, 736.
- " mounds, objects, 734.
- " notice of collections, 102, 733.
- " objects from arranged, 729.
- " ornaments, 734, 735, 736.
- " Palmer, E., explorations, 733.
- " pipes, 734.
- " pottery, 211, 490, 733, 734, 736.
- " Pueblo of, 149.
- " sketch of the siege by Cortez, 156.
- " spindle whorls, 737.
- " stamps and molds, 737.
- " stone carving, human head, from cave, 207. [740.
- " " implements, 734, 735, 736.
- " " mask from Palenque, 213.
- " " sculpture, 734, 736.
- " vegetable products used by Indians, 733, 734.
- Mica, New Jersey, 484.
- " stone grave, Lee Co., Va., 208.
- " " Tenn., 732.
- Michigan, mounds, 728.
- " photograph of ornament, 20.
- Middletown, Museum of Wesleyan University, 491.
- Mills, C., 217.
- Milwaukee, Naturalischen Vereins von Wisconsin, 746.
- Minneapolis, Minnesota Historical Society, 493, 743.
- Mississippi, articles from mound, 14.
- " mounds, 723.
- " stone implements, 18.
- " valley, mounds, 473.
- Missouri, Big mound at St. Louis, 475, 740.
- " carved shell disks from mound, 485, 732.
- " casts of Jars, 18.
- " chambered mounds, 717, 738.
- " explorations, 717.
- " mounds, 717, 728.
- " paint from mound, 484.
- " photographs of pottery, 17.
- " pipes, mounds, 484, 486.
- " pottery, mounds, 208, 211, 214, 216, 484, 486, 488, 738.
- " shell beads, mounds, 484, 486, 740.
- " stone implements, 210, 214, 482, 485, 486, 740, 742, 743.
- Mohave Indian comb, 14.
- Mohave Indians, articles made and used by, 17.
- Monk's mound, 471.
- Montezuma's well, model, 743.
- Moody, J. D., 218.
- Moore, C. B., 491, 735.
- " Collection, 476.
- " Egyptian collection, 723.
- Morgan, J. D., 203, 213, 310.
- " L. H., Description of ancient stone Pueblo, on the Animas River, New Mexico, with a ground plan, 475, 536.
- " L. H., notice of Mr. Bandelier's papers, 12.
- " W. F., 732.
- Morse, E. S., 17, 196, 216, 750.
- " " objects from Japan, 733.
- " G. W., 747.
- Mortar, stationary, at Trenton, N. J., photograph, 20.
- " used in the Pueblos, 542.
- Mortillet, G. de., 744.
- Mosaic, Roman, 491.
- Moses, T. F., 215.
- Mosler, Mrs., 739.
- Mound and circle, Ohio, 67.
- " Athens Co., Ohio, objects, 19.
- " Bell Co., Ky., 16, 209.
- " Big, in St. Louis, destruction, 475.
- Mound-builders, derived from New Mexico, 553. [470.
- " distribution of southern, houses, 205.
- " identity with stone grave people, 737.
- " map and exploration of a town of, 339.
- " several nations of, 727.
- " Tennessee, conclusions regarding, 204.
- " town, exploration, 204.
- " " objects from, arranged, 728.
- Mound, Butler Co., Ohio, fragment of cloth, 18.
- " Cahokia, 470.
- " circles in Ohio, 51.
- " construction, 57. [76.
- " council-house of Cherokee on, Edgely, Tenn., stone implements, 483.
- " Ely, Va., a place of residence, 81.

- Mound.** La Platte Co., Col., metate, 485.
 " largest in the United States, 470.
 " Lee Co., Va., objects, 15, 37, 28.
 " Lynxville, Wis., human cranium, 308.
 " Madison Co., Miss., objects, 14.
 " Marion Co., Kansas, 718.
 " Missouri, curved shell disk, photograph, 485.
 " Monk's, 471.
 " near Cahokia, European articles in, 485.
 " Newark, Ohio, copper beads, 488.
 " " stone pipe, 488.
 " New York, objects, 741.
 " Ohio, section of, fig., 69.
 " Paragonah, Utah, objects, 213.
 " Payson, Utah, objects, 213.
 " remains of cedar post, 75.
 " Rose Hill, Va., explored, 75.
 " Russellville, Tenn., objects, 15.
 " Santa Clara, Utah, objects, 13.
 " Seltzertown, accounts of, 470.
 " Spruce Creek, Florida, description, 483.
 " " " pottery, 483.
 " St. George, southern Utah, objects, 209, 213.
 " Tennessee, copper and wood ear ornaments, 483.
 " Xenia, Ohio, stone implements and pipes, 488.
Mounds, absence of in Texas, 719.
 " Alabama, stone implements, 212.
 " Arkansas, 739, 742.
 " " character of, 719.
 " " pottery, 216.
 " Bowling's farm, Tenn., objects, 214.
 " conflicting testimony of the, 11.
 " Dakota, 720, 742.
 " distribution of, 728.
 " Dubuque, Iowa, objects, 17.
 " Dunleith, Ill., human remains, Florida, 741. [18.
 " " map of, 723.
 " " often contain European objects, 468.
 " Illinois, 485, 720, 743.
 " Kansas, 738.
 " Louisiana, stone implements, 18.
 " Merom, Ind., objects, 18.
 " Mississippi valley, 473.
 " Missouri, 717, 738, 740.
 " " pottery, etc., 208, 211, 214, 216, 484, 485, 488.
 " Nicaragua, pottery, 469.
 " objects from, arranged, 727.
 " Ohio, 15, 57, 66, 743.
 " Santa Fé Lake, Cade's Pond, etc., Florida, 487.
 " south-eastern Ohio, report on explorations, 51.
 " Tennessee, description, objects, 310.
 " " exploration, 337.
 " " not always burial mounds, 339.
 " Tola, Nicaragua, objects, 491.
 " within earthwork in Tenn., exploration, 341.
 " with stone chambers, 717, 738.
 " Wolf Plain, Ohio, 66.
Mummied animals, Egypt, 490.
 " fish, Egypt, 209.
Mummied head with braided hair, Peru, fig., 303.
Mummies, Peru, description and figures, 278, 284.
 " portions of, Egypt, 490.
Mummy cloth, Egypt, 490, 741.
Munich, Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte, 218, 483, 746.
Munroe, C. E., 207, 210.
Murlock, S., 208, 221.
Museum, additions, 13, 207, 476, 739.
 " Building, first meeting of Trustees in, 177.
 " early history, 177.
 " its record for ten years, 7.
 " open to the public, 714, 736.
 " preliminary arrangement of 191, 725.
 " reference to its temporary quarters, 10.
 " removal to new building, 191.
Musical instruments, Fiji, 487.
 " " Indians of the Amazon, 491.
 " " Mexican Indians, 734.
Nashville American, 203, 212.
Navajo blankets and sashes, 485.
 " Indians, objects, 736.
Necklace, Africa, 211.
 " Alaska, 207.
 " Brazil, 211.
 " Hawaiian Islands, 732.
 " modern Indian, 211.
Needle in sheath, Africa, 211.
Newbold, M., 738.
New Britain Island, club, 741.
New Grenada, gold ornaments, 9, 20.
New Guinea, dress, 482.
New Hampshire, pottery, 483.
 " stone implements, 18, 488, 735.
New Jersey, age of gravel beds, 44.
 " bone implement, 481.
 " crania, 484, 738.
 " difference in time between argillite and flint implements, 513.
 " explorations, 11, 118, 466, 715.
 " Flint chips, paper on 506.
 " human face carved on stone, 210, 739.
 " implements of slate, 514.
 " mica, 484.
 " ornaments of stone, 484, 489.
 " photographs of objects, 20.
 " pipes, 19, 484.
 " pottery, 17, 212, 215, 484, 489, 737, 738, 739.
 " Report on discovery of implements in the Glacial Drift, 30.
 " Report on the stone implements from Glacial Drift, 225.
 " shell and glass beads, 484.
 " shellheaps, 715.
 " soapstone pot, 738.
 " stone implements, 18, 19, 209, 210, 211, 212, 215, 484, 485, 489, 737, 738, 739.
 " stone implements from the gravel, 17, 208, 209, 210, 214, 215, 484, 715, 737, 739.
 " stone pot, 18.

New Mexico, description of ancient stone Pueblo. 536.
 " " models of Pueblos, 736, 743.
 " " pottery, 213.
 " " stone implements, 487, 491, 736.
 " " vegetable products used by Indians, 216.
 New York, American Geographical Society, 494.
 " American Museum of Natural History, 750.
 " Astor Library, 23.
 " bone implement, 485.
 " brass ring, 743.
 " cast of carved stone, 216.
 " crania, 483. [732.
 " deposit of stone implements, explorations of mounds, 721.
 " High Rock Spring, objects from under 739.
 " human bones, 483, 741. [184.
 " Indian grave at Sag Harbor.
 " Metropolitan Museum of Art, 13, 218, 494, 750.
 " mounds, 738, 741.
 " pottery, 741, 743.
 " shellheap at Sag Harbor, 494.
 " stone implements, 18, 484, 488, 737, 739, 740, 741.
 New Zealand, stone implements, 18.
 Nez Percé Indians, bread 14.
 Nicaragua, beads of bone, stone and shell, 106, 211, 492, 740.
 " carved metates, 492. [740.
 " Cave at Cucurizna, objects 486.
 " caves, shellheaps, burial mounds rock inscription, 489.
 " crania, eaves, 486, 740.
 " explorations, 488, 716.
 " human bones, cave, 486, 740.
 " Idols, 740, 741.
 " jade knife, 492.
 " mound at Tola, objects, 491.
 " pottery, 198, 741, 489, 496, 491, 740.
 " " shellmound at La Virgin, 486.
 " shellmound at La Virgin, 486.
 " spindle-whorls, 492.
 " stone implements, 486, 492, 740.
 " whistles, 492, 740.
 " wooden stool from cave, 740.
 Nicolucci, G., 219.
 Nipher, F. E., 210, 748. [217.
 North America, casts of heads of Indians, copper implement, 743.
 " Indian bait basket, 490.
 " " clubs, 214.
 " " implements, 211, 736.
 " " leggings, 732.
 " notice of collections, 192.
 " photograph of stone implements, etc., 214.
 North Carolina, pipe described, 16.
 " " pottery, 215, 738.
 " " stone implements, 18, 212, 215, 733, 738, 740.
 Other Collection, 737.
 Officers of the Museum, 4, 173, 462, 712.
 Ohio, Ash Cave in Hocking Co., 19. [721.
 " burial vault under mound of stone, casts of human heads carved in stone, 215.

Ohio, cloth from a mound, 18.
 " collection, 724.
 " copper beads, mound, 488.
 " corn from Madisonville graves, 741.
 " crania, 29, 735.
 " earthworks in, represented, 721.
 " explorations, 10, 721.
 " flint, ancient mining for, 54.
 " hematite implements, 488.
 " mounds and earthworks, 15, 51, 52, 53, 55, 67, 728.
 " " objects, 15, 19, 488, 743.
 " photographs of skulls from mound, pipe from mound, 488. [215.
 " pottery, 15, 217, 488, 491, 735, 743.
 " Stone Fort at Glenford Station, 55.
 " stone implements, 13, 15, 18, 209, 212, 217, 487, 488.
 " Report on exploration of a cave, 48.
 " " " mounds, 51.
 " rock-shelter, 491.
 " Ojibwa Indians, articles made and used by, 17.
 " Valley, ornaments, 487, 743.
 " pottery, 209, 212.
 " " stone implements, 212, 742.
 Ornament, bear's tooth, stone graves, Tennessee, fig., 335.
 " copper from stone grave, Tennessee, fig., 307.
 " mound, Missouri, 738.
 " stone, United States, 732.
 Ornaments, bone, stone graves, Tenn., 213.
 " Egypt, 490.
 " gold from Bogota, 30.
 " Indians, Venezuela, 737.
 " Mexico, 734, 735.
 " shell, bone, stone, teeth, Islands of San Clemente and Santa Catalina, 216, 489.
 " shell, stone graves, Tenn., 213, 487.
 " stone graves, Tenn., 213, 487, 735, 739.
 " stone, New Jersey, 484.
 Osgood, A., 17, 206.
 " F. S., 750.
 Otis, G. A., 9, 751.
 Overton, Mr. and Mrs. J., M., 203, 212, 308.
 Owl, representation on pottery from various countries, 9.
 Pacific Islands, notice of collection, 193.
 " " weapons and paddles, 18.
 Packard, A. S., Jr., 18. [211, 757.
 Paddles, Indians of the Amazon, 491.
 Pah Ute Indians, collections, 13, 199, 213.
 " " " no longer pottery makers, 213.
 " " " salt mine, 210.
 Palaeolithic implements, England, photographs, 215.
 " " New Jersey, 17, 18, 19.
 " " of the Glacial drift of New Jersey. Report on, 30.
 Palenque tablet, cast, 742.
 Palmer, E., 13, 17, 19, 210, 213, 215, 216, 222, 735, 743, 750.
 " " Account of Cave Dwellings in Utah, 399.
 " " explorations, 10, 198, 210, 213, 489, 716, 719.
 Parker, F. A., 207.
 Parkman, F., 19.

- Parry, C. C., 13.
 Patrick, J. J. R., 736. [473.
 " " models of Cahokia Mound,
 Peabody Education Fund, 479.
 " " Trustees of, 492.
 " George, anniversary of his birth,
 " medal of, 479, 492. [177.
 " portrait, 479.
 " Museum, view of, frontispiece.
 Pecos Church, latter, 14.
 Peet, S. D., 493.
 Pelew Islanders, photographs, 215.
 Pennsylvania, crania, 490, 738.
 " glass beads, 490, 738.
 " Indian soapstone quarry,
 " pipes, 737. [274.
 " pottery, 487, 737, 738.
 " shell beads, 485, 738.
 " soapstone pot, 738.
 " stone implements, 20, 210.
 " 211, 215, 235, 481, 483, 487, 737, 738, 739.
 Perforated stones, California, 268.
 " " flgs., 268, 267.
 " " clubheads, 741.
 Perkins, G. A., 15, 743.
 " G. H., 219, 749.
 Perry, J. B., 214.
 Persia, wooden spoon, 741.
 Pern, Agassiz Collection, 15.
 " Aymara garments, 211.
 " Blake Collection, 195, 216, 277.
 " " of crania, 478.
 " bronze, 8, 18.
 " Bucklin Collection, 724.
 " copper ornament, 490.
 " tweezers, 490.
 " crania, 478, 485.
 " horse accoutrements, 488.
 " human bodies, 209, 216.
 " inscribed rocks, 214, 477, 490.
 " Mayer Collection, 724.
 " mummies, 209, 216.
 " notice of collections, 191.
 " objects from graves, 15, 211, 490.
 " photographs of pottery, 13.
 " pottery, 8, 15, 477, 490, 732, 738.
 " tattooed arm, 490.
 Peruvian collection, additions, 8.
 Peters, D. C., 11.
 Pickering, C., 25, 742, 747.
 " " bequest, 725.
 " " Collection, 723.
 " Mrs., 742, 750.
 Pilling, C. E., 482, 743.
 Pipes, Alabama, 14.
 " Arkansas, 739, 743.
 " cairns, Kansas, 718.
 " California, 208, 488.
 " Canada, 488.
 " Delaware, 485.
 " Illinois, 211, 730.
 " Indian graves, Mass., 483, 481, 732.
 " Kansas, 718, 738.
 " Kentucky, 484.
 " lead, Indian grave, Mass., 483.
 " manufacture by former Indians,
 " Cal., 268.
 " Massachusetts, 209, 732.
 " Mexico, 737.
 " modern Indian, 211, 732.
 " Mohave, 17.
 " mound, Kentucky, 737.
 " " Missouri, 484, 486.
 " " Ohio, 488.
 " " Tennessee, 15.
 " New Jersey, 19, 20, 212, 484.
 Pipes, North Carolina, 16.
 " Ohio, 487, 488.
 " Ojibwa, 17.
 " Pennsylvania, 737.
 " Santa Catalina, Cal., 486.
 " stems of clay, Trenton, N. J., 212.
 " stoue-graves, Tennessee, 484.
 " " flgs., 328,
 " 348, 349, 350, 351, 352.
 " Tennessee, 15, 16, 19, 212.
 " Texas, 740.
 " tubular, Mass. and Cal., 73, 209.
 " United States, 487.
 " Virginia, 210.
 " wood, Rocky Mountain, 209.
 Pitcairn's Island, native cloth, 211.
 Plants used by Indians of Cal. for basket
 work and for dyeing, 523, 524.
 Poinsett, J. K., 213.
 Polishing stones, Mexico, 736.
 Pool, H. W., 493, 740.
 Porter, Governor of Tennessee, 208.
 Porto Rico, stone and pottery objects, 14.
 Pottery, Alabama, 14.
 " Arabia, 741.
 " Arizona, 19.
 " Arkansas, 739.
 " British Honduras, 486.
 " Cahokia Mound, 4-5.
 " California, 521.
 " Canada, 14.
 " cave, Mexico, 734.
 " " Ohio, 19.
 " " Tennessee, 212, 482.
 " " Utah, 213, 270.
 " " Virginia, 209.
 " China, 740.
 " childrens' graves in houses of
 " moundbuilders, Tenn., flgs.,
 " 351, 352, 358, 359.
 " coil-made, 467, 521.
 " Colorado, 19, 483, 732, 741.
 " " grave, 482.
 " Dakota Territory, 741, 742.
 " Egypt, 490, 741.
 " fave, Guayaquil, 215.
 " Fiji, 487.
 " France, 490.
 " Florida, 481, 487, 735, 737, 741.
 " glazed, mound in Florida, 468.
 " " " Spanish
 " make, 487.
 " " remarks on, 408.
 " Greece, 486, 410, 743.
 " Illinois, 483, 743.
 " Indian grave, Mass., 484.
 " Indiana, 14, 217, 488.
 " Indians of California, 467, 486.
 " Italy, 216, 490, 491.
 " Kentucky, 488.
 " Kickapoo Indians, 743.
 " Maine, 483.
 " Massachusetts, 484.
 " Mattaponi Indians, 741.
 " Malta, 741.
 " method of manufacture, southern
 " California, 521.
 " Mexican Indians, 211, 732.
 " Mexico, 480, 734, 738, 737.
 " Missouri, 18, 484, 481, 486.
 " " arrangement, 728.
 " " photographs, 17.
 " Mohave, 17.
 " moundbuilders' houses, Tenn.,
 " flgs., 353.
 " mounds, Arkansas, 216, 739, 742.

- Pottery, mounds, Florida, 467, 483, 487.
 " " Indiana, 18.
 " " Kentucky, 15.
 " " Mexico, 734.
 " " Missouri, 203, 211, 214, 216, 484, 486.
 " " Nicaragua, 489.
 " " Ohio, 488, 743.
 " " Tennessee, 214.
 " " Utah, 209, 213.
 " " Virginia, 80.
 " New Hampshire, 488.
 " " Jersey, 17, 19, 212, 215, 481, 489, 737, 738.
 " " Mexico, 213.
 " " York, 18, 741, 743.
 " Nicaragua, 211, 485, 491, 740.
 " North Carolina, 215.
 " Ohio, 15, 217, 488, 745, 743.
 " " Valley, 209, 211.
 " Pah Ute, 213.
 " " " not now made, 213.
 " Pennsylvania, 487, 737, 738.
 " Peru, 8, 15, 490, 732, 736.
 " " figures, 283, 293, 294, 295, 296, 297.
 " " photographs, 13.
 " Porto Rico, 14.
 " rock-shelter, Ohio, 491.
 " shellheaps, Florida, 487, 741.
 " " Japan, 216.
 " " Maine, 483.
 " South Carolina, 483.
 " Spanish, 491.
 " stone-graves, Tennessee, 213, 214, 215, 483, 484, 484, 486, 488, 732, 735, 736.
 " " " Tennessee, *fls.*, 308, 317, 319, 320, 321, 322, 323, 324, 325, 326, 327, 343, 345, 346, 347, 348, 349, 353.
 " Swiss Lakes, 491.
 " Syria, 490.
 " Tennessee, 208, 213, 214, 215, 482, 483, 484, 485, 488, 735, 736, 738.
 " Texas, 743.
 " Tiahuanaco, Lake Titicaca, 490.
 " Tyre, 490.
 " Utah, 19.
 " Vermont, 482.
 " Virginia, 210, 492.
 " Western Islands, 211.
 " West Virginia, 488.
 " Wisconsin, 491.
 " Wurtemberg, 14.
 Potts, W. J., 488, 495.
 Pourtales, L. F., 218, 483, 491, 495.
 Powell, J. W., 203, 216, 483.
 President and Fellows of Harvard College, transmission of Reports to, 3, 175, 464, 718.
 Pribiloff Islands, garments, implements, models of boats, 208.
 Proudfoot, J. B., 735.
 Publication fund, desirability of, 481.
 Publications of the Museum, 481.
 Pueblo, ancient stone, on the Animas River, description of, with plan, 536.
 " Nations, objects from, arranged, plan of ancient, 537. [72].
 " population of, 536.
 Pueblos, general remarks on, 535.
 " models of, 726, 743.
 Puget's Sound, basket, matting, fishhook, fishing line, 487.
 Pulsifer, W. H., 740.
 Putnam, B. W., 208, 221.
 " F. W., 17, 18, 22, 25, 29, 213, 219, 482, 483, 484, 485, 487, 488, 739, 740, 750.
 " " " Archaeological Explorations in Tenn., 305.
 " " " exploration of mound-builders' town in Tennessee, 204.
 " " " explorations in Tenn., 201, 243, 305.
 " " " Manufacture of soap-stone pots by former Indians of New England, 273.
 " " " Note on tubes of stone, etc., found in mounds, 73.
 " " " Reports as Curator, 7, 191, 490, 715.
 " Mrs. F. W., 485.
 Pyrites from stone grave, Va., 208.
 Rabbit net, Pah Ute Indians, 213.
 Rameses the Second, tablet, 723.
 Rattle made of turtle's shell, 14.
 " Assiniboin Indians, 14.
 Rau, C., 749.
 Ray, Mr., 736.
 Read, M. C., 491.
 Records of the Trustees, abstracts, 5, 176, 465, 714.
 Reeves, C., 738.
 Refuse heaps, Ill., 743.
 Regina, E., 21.
 Reynolds, E. B., 489, 732.
 " " " account of ancient Indian soapstone quarry in district of Columbia, 475, 528.
 Rhode Island, ancient soapstone quarry, 274, 482.
 " crania, 477.
 " soapstone pots, 482, 737.
 " stone implements, 737, 739.
 Rice, J., 736.
 Richardson, H. A., 748.
 Richmond, A. G., 216, 751.
 Riga, Gesellschaft für Geschichte und Alterthumskunde der Ostceprovinzen Russlands, 23.
 Ring of stentite, stone graves in Tennessee, fig., 329.
 Robertson, D. A., 13, 25.
 " E. S., 212, 215, 216.
 Robinson, J., 491.
 " Mr., 489.
 Rock carvings in cave, Ohio, 49.
 Rock-house, Hardinsburg, Ky., 209.
 " Ivy Creek, Ky., 15.
 " sculptures, Vermont, 14.
 Rock-shelter, Ohio, objects, 491.
 Rogan, H., 15.
 Roman bricks, 743.
 Rome, British and American Archaeological Society, 21.
 Roper, C. E., 735.
 Russell, S. H., 743.
 Rust, H. N., 213.
 Saint Louis, Academy of Sciences, 53, 493.
 Salem, Essex Institute, 741, 750.
 " " " members of 18.

- Salem, Peabody Academy of Science, 9, 19, 23, 24, 29.
- Salisbury, S., acceptance of resignation as Treasurer, 485.
- " " reelected Treasurer, 714.
- " " report of Ex-treasurer, 714, 752.
- " " " Treasurer, 162, 450, 701.
- " " requested to hold the funds as Ex-treasurer, 405.
- " " resignation of the office of Treasurer by, 176.
- " " Jr., 218, 486, 749.
- Sampson, F. A., 314.
- Sandal, Peru, fig., 286.
- Saudala, China, 485.
- Sandwich Island, see Hawaiian Islands.
- San Francisco, California Academy of Sciences, 491.
- San Juan district as the early home of Indian tribes, 552.
- " " importance of as an early seat of Village Indians, 550.
- Sash, Mexico, 211.
- Scarabei, Egypt, 490, 740, 741.
- Schmidt, E., 747.
- Schumacher, P., 200, 216, 222, 486, 489.
- " " Explorations of Islands of San Clemente and Santa Catalina, account of, 200.
- " " Methods of manufacture of Pottery and Baskets by Indians of Southern California, 521.
- " " Methods of manufacture of several articles by former Indians of Southern California, 258.
- Scudder, S. H., 739, 749.
- Sears, J., 17.
- Semper, C., 213.
- Shaler, N. S., 24, 203, 743.
- " " On the age of the Delaware (Trenton) Gravel beds, 12, 44.
- Shallenberger, S. M., 749.
- " T. M., account of mounds, Illinois, 720.
- Shannon, Mr., 739.
- Shark's tooth, chambered mound, Missouri, 738.
- Sharp, Dr., 207.
- Sharples, S. P., 274.
- Shawnee cranium, New Jersey, 498.
- " Island, Delaware River, takes its name from the tribe, 715.
- Shell beads, California, 215.
- " " cave, Kentucky, 15.
- " " Indian grave, Mass., 484.
- " " mounds, Arkansas, 742.
- " " Florida, 736.
- " " Missouri, 484, 486, 740.
- " " Ohio, 61.
- " " Virginia, 80.
- " " figs., 85.
- " " Pennsylvania, 485, 737.
- " " New Jersey, 484.
- " " Nicaragua, 492.
- " " Santa Catalina Isl. Cal., 486.
- " " stone graves, Tennessee, 482, 487.
- " " Vermont, 214.
- Shell fishhooks, Fiji, 488.
- " " Santa Catalina, Isl., Cal., 486.
- Shellheap, New York, stone implement, 484.
- " " Omori, Japan, objects, 196, 218.
- " " Pine Grove, Mass., cranium under, 18, 29.
- Shellheaps, Florida, 487, 741.
- " " map, 722. [214.]
- " " Wyman Collection, Maine account of 197.
- " " crania, 214.
- " " objects, 196, 214, 483.
- " " New England and Canada, objects, 17.
- " " New Jersey, 715, 739.
- " " Nicaragua, antiquity, 480.
- " " Santa Catalina Isl., Cal., objects, 486.
- " " Texas, 743.
- Shell implement, Florida, 741.
- " " ornaments, cave, Tennessee, 212.
- " " Island San Clemente, Cal., 216.
- " " Mexico, 736.
- " " mound, Utah, 213.
- " " Santa Catalina Isl., Cal., 216, 489.
- " " stone-graves, Tenn., 214, 487, 735, 736.
- " " Tennessee, 212.
- " " pin, cave, Virginia, 15.
- " " mound, Kentucky, 15.
- " " Virginia, fig., 87.
- " " Nicaragua, 740.
- " " spoons, mounds, Tenn., 214.
- " " stone-graves, Tennessee, 335, 482, 484, 732.
- " " totem, 742.
- Shells, carved, mound, Missouri, 485, 732.
- " " " Virginia, 57.
- " " stone-graves, Tennessee, 212, 308, 488, 732.
- " " Tennessee, 212, 732.
- " " figs., 308, 310.
- " " Great Deer Island, Me., 483.
- " " of Bu-yoon, cave, Tenn., 212.
- " " mound, Tenn., 15.
- Shoes, Egypt, 741.
- Short, J. T., explorations, 721, 743.
- Shovel, horn of Rocky Mountain sheep, cave, Utah, description and fig., 213, 271.
- Shovels and hoes of flint, note, 272.
- Silver ornament, Peru, fig., 282.
- Simms, S., 212.
- Sioux cranium, 737.
- " " Indian, bone implement, 744.
- " " clubs, 214.
- " " Indian, photographs, 13.
- Slater, E. F., 749.
- Slate implements, weathering of 514.
- Sloan, J., 18.
- Smith, C. L., 210.
- " Dr., 736.
- " Miss J., measurements of crania, 221, 475.
- " " Museum assistant, 479, 730.
- " Mrs. E. A., 740.
- " R., 13, 483.
- Snowshoes, Indian, 211.
- Snyder, J. F., 18, 210, 485.
- Sonp-stone pot, Indian grave, Mass., fig., 273.

Stone implements, mounds, Florida, 487.
 " " " Illinois, 743.
 " " " Iowa, 17.
 " " " Louisiana, 18.
 " " " Mo., 486, 738, 740.
 " " " Ohio, 15, 488.
 " " " " figs., 52, 58.
 " " " Tennessee, 214.
 " " " New Hampshire, 18, 488, 735.
 " " " " Jersey, 14, 17, 18, 19, 209, 210, 211, 212, 215, 484, 485, 489, 737, 738, 739.
 " " " " Mexico, 487.
 " " " " York, 18, 484, 488, 737, 738, 740, 741.
 " " " " Zealand, 18.
 " " " Nicaragua, 211, 486, 492, 740, 741.
 " " " " Nice, 490.
 " " " North Carolina, 16, 212, 215, 733, 740.
 " " " obelidian, New Mexico, 491.
 " " " Ohio, 13, 15, 18, 209, 212, 217, 488, 742.
 " " " Pah Ute Indians, 213.
 " " " Pennsylvania, 20, 210, 211, 215, 255, 484, 486, 497, 737, 738.
 " " " photographs, 214, 215, 485.
 " " " Porto Rico, 14.
 " " " Rhode Island, 737, 739, 743.
 " " " Sandwich Islands, 487, 490. [486.
 " " " Santa Catalina Isl., Cal., serpentine celt, 488.
 " " " shellheap, Kansas, 738.
 " " " " New York, 484.
 " " " shellheaps New England, South Carolina, 486. [17.
 " " " stone-graves, Tennessee, 212, 214, 215, 309, 329, 330, 331, 342, 344, 482, 483, 484, 487, 488, 732.
 " " " Sweden, 490.
 " " " Swiss Lakes, 490, 491, 740.
 " " " " " many with handles, 490.
 " " " Switzerland, 491.
 " " " Tennessee, 14, 15, 16, 208, 210, 212, 213, 482, 483, 484, 487, 735, 736, 738, 740.
 " " " Texas, 740, 743.
 " " " United States of Columbia, 18.
 " " " used in making soapstone pots, 202, 275, 482, 486, 488, 535, fig., 262.
 " " " Vermont, 214.
 " " " Virginia, 15, 210, 211, 492.
 " " " West Indies, 735.
 " " " Wisconsin, 491.
 " " " Wyoming Territory, 18.
 " " " knife, Peru, fig., 290.
 " " " L., 216.
 " " " marked, cave, Ohio, 19.
 " " " mask, Palenque, 213.
 " " " metates, ornamented, with feet, Nicaragua, 492.
 " " " mortar, grave, Colorado, 492.
 " " " New Jersey, 737.
 " " " Stationary at Trenton, photograph, 20.

Stone mortar, Taunton, Mass., 215.
 " " mortars, manufacture of by former Indians of California, 204.
 " " " Santa Catalina, Cal., 486.
 " " mounds, Hocking Co., Ohio, 70.
 " " ornaments, Islands of San Clemente and Santa Catalina, 216.
 " " " Mexico, 733, 735. [20.
 " " " Michigan, photograph, 20.
 " " " New Jersey, 215, 489.
 " " " Ohio, 487, 742.
 " " " Pennsylvania, 739.
 " " " Stone-graves, Tenn., 213, 487, 735.
 " " " United States, 732.
 " " " Virginia, 210.
 " " pan, animal-shape, Chiriqui, description, 207.
 " " pipe, Indian grave, Mass., 484, 732.
 " " " Rockford, Ill., 211.
 " " " Tennessee, 212, 214.
 " " pots, New Jersey, 18.
 " " " Santa Catalina Isl., Cal., 486.
 " " " Tiahuanaco, 490.
 " " Pueblo, ruin of, on the Animas River, description of, 475, 536.
 " " sculptures, Mexico, 736.
 " " tube, mound, Florida, 735.
 " " " mounds, Ohio, 19, 73.
 Stones, ancient Pueblo, figs., 514, 549.
 " " grinding, Nicaragua, 492.
 Storer, H. N., 737.
 Storror, E., 14.
 Straight, H. H., 495.
 Stratton, F. A., 207.
 Stringfellow, R. J., 736.
 Strings, cave, Utah, 213.
 Stuart, A. H. H., 492.
 Stubbs, C. H., 738.
 Sturgis, A., 741.
 Summers, Dr., 203.
 " " T. O., 212, 221.
 Sumner, C., Egyptian collection, 723, 743.
 Supreme Court, decision, 714.
 Swan, J. G., 216.
 Swalen, bronze implements, 490.
 Sweet, G. W., 720, 742.
 Swiss Lakes, animal bones, 490, 491.
 " " bone implements, 490.
 " " bronze implements, 491.
 " " collections, 475, 490.
 " " horn sockets, 491.
 " " pottery, 491.
 " " spindle whorls, 490, 491.
 " " stone implements, 490, 491, 740.
 Syphilis, doubtful with stone grave people, Tennessee, 305.
 Syria, lamps, 490.
 " " pipe, comb, etc., 743.
 " " pottery, 490.
 " " stone implement, cave, 215.
 Tapley, A. A., 487.
 Tappa cloth, Pitcairn's Island, 211.
 Tattooed arm, Ancon, Peru, 490.
 Tennessee, Archaeological Explorations in, 305.
 " " animal bones from mounds and stone graves, 214, 484.
 " " assistance from citizens, 470, 735, 736.
 " " bone implements, 212.
 " " carved shells, 212, 308, 486, 732.

- Tennessee, cast of stone "phallus," 216.
 " caves, 15, 212.
 " caves, objects, 209, 212, 482.
 " children buried under floors of houses of moundbuilders, 350.
 " coal and shell objects, 212.
 " copper ornaments, stone graves, 732, 735.
 " " and wood ear ornaments from mound, 483.
 " crania, 16, 29, 207, 212, 213, 214, 316, 482, 483, 484, 486, 488.
 " " cave, 27, 482. [224.
 " " measurements, 221.
 " " stone graves, 214, 482, 483, 484, 486, 732, 735, 736.
 " " stone graves, observations on, 301.
 " exploration of a town of the moundbuilders in, 304, 339.
 " houses of moundbuilders, 347.
 " human bones, cave, 212.
 " " stone-graves, 482, 486, 732.
 " " femur, fractured, stone grave, 486.
 " " tibiae, children, 350.
 " Indian, cranium, with bullet holes, 216, 222.
 " iron tomahawk, 736.
 " map of a town of moundbuilders, 339.
 " mounds in, collection, 15, 213, 214, 310, 482, 728.
 " mounds in, description, 310.
 " " exploration, 310, 337, 340, 342.
 " ornaments, stone graves, 487, 732, 735, 736.
 " photographs of objects, 18.
 " pipes, 15, 16, 19, 214.
 " pottery, 208, 213, 214, 215, 308, 317, 313, 323, 482, 483, 484, 486, 488, 732, 738.
 " pottery caves, 212, 482.
 " shells, cave, 212.
 " steatite tube, 208.
 " stone fort at Manchester, 720.
 " " graves, beads of pottery, 482, 488, 735.
 " " " collections from, 213, 214, 215, 483, 484, 486, 488, 732.
 " " " descriptions of objects 305.
 " " " pipe, 214.
 " " " pottery, 214, 215, 482, 483, 484, 486, 488, 735, 736.
 " " " shell beads, 482, 487, 732, 735, 736.
 " " " shell pins, 732.
 " " " shells, carved, 488, 735, 736.
 " " " shell spoons, 214, 482, 484, 732.
 " " " soapstone pot, 483.
 Tennessee, stone graves, spindle-whorls, 488.
 " " " stone implements, 214, 215.
 " " stone implements, 14, 15, 16, 208, 210, 212, 213, 214, 215, 300, 342, 482, 483, 484, 487, 488, 732, 735, 736, 738, 740.
 Texas, absence of mounds, 719.
 " Comanche arrow, 488.
 " explorations, 719.
 " Kickapoo pottery, 743.
 " method of procuring flint by Indians, 719.
 " piles of burnt stone, 719.
 " pipe, 740.
 " pottery, 743.
 " shellheaps, 743.
 " stone implements, 740, 743.
 Thayer expedition to Brazil, objects from, Thomas, Mr., 736. [478.
 Thompson, A. D., 19, 739.
 " A. H., 485.
 " A. T., 17.
 " Dr., 204.
 " J. L., 212.
 Thoreau, H. D., 743.
 Thrend, Peru, 16, 211.
 Thurston, G. P., 203, 212.
 Tiahuanaco, Lake Titicaca, gold ornament, 490.
 " " " pottery, 490.
 " " " stone pot, 490.
 Tiles, Labrador, 737.
 Tilton, H., 14.
 Tobacco, Japanese, 216.
 " pouch, Africa, 487.
 Tokio, Imperial University, 216, 495, 751.
 Tooker, W. W., 484, 494, 751.
 Topinard, P., 730, 744.
 Torenio, Count of, 746.
 Toys, Mexican Indians, 734.
 Treasurer, Report, 162, 450, 701, 752.
 " Reports adopted, 6, 176, 465, 714.
 Trippie, T. M., 483.
 Trustees of Peabody Education Fund, 219.
 " of the Museum, 4, 173, 462, 712.
 Tube, clay, mound, Ohio, 63.
 " steatite, Tennessee, 208.
 " " " fig., 63.
 " stone mounds, Ohio, 19, 73.
 Tubes of stone, pottery, etc., probably pipes, 73.
 Turtle-back celts, description, figs., 32, 33.
 United States, Army Medical Museum, 22, 25.
 " " Chief of Engineers, 22, 217.
 " " Department of the Interior, 21, 217, 493, 751.
 " " of Columbia, stone implements, 18.
 Urbana, Central Ohio Scientific Association, 494.
 Uruguay, horse accoutrements, 488.
 Utah, adobe houses, ancient, 727.
 " ancient Pueblo nation, 727.
 " cave dwellings, account, 200.
 " " objects, 727.
 " caves, 196, 213.
 " explorations, 10, 198.
 " Indian salt mine, 210.
 " measurements of cranium from mound, 222.
 " mounds, adobe houses, 198.

- Utah, mounds, adobe houses, objects, 13, 19, 210, 213, 737.
 " Pah Ute Indian cranium, 222.
 " " " objects, 213.
 " pottery, 19.
 " " shovel, etc., cave, 213.
 " vegetable products used by Indians, 210, 216.
 Ute Indians, bow and arrows, 19, 736.
- Valentini, P., 494.
 Vegetable fibre and cloth, Indians of the Amazon, 491.
 " products used by Pah Ute Indians, 210, 213.
 " " used by Indians, Mexico, 733, 734.
 " " used by Indians, N. America, 216.
 Venetian glass rod for beads, 13.
 Venezuela, Indian objects, 737.
 Vermont, casts of pots, 482.
 " cranium, 20.
 " Indian Rock Sculptures, 14, 214.
 " stone implements, shell and copper beads, 214.
 Virginia, ancient soapstone quarry, 274, 528.
 " bone implements, 210.
 " caves, 209.
 " " objects, 15, 209.
 " copper band, grave, 209.
 " crania, 27, 28, 492.
 " deposit of stone implements, 211.
 " explorations, 11.
 " human bones, 482.
 " " cave, 15, 732.
 " mounds, 15, 75, 209, 728.
 " pipe and stone ornament, 210.
 " pottery, 492.
 " " of the Mattapony Indians, 741. [208.
 " pyrites and mica, stone grave, stone implements, 15, 210, 211, 484, 492.
- Wadsworth, M. E., mineral character of Implements from glacial drift, New Jersey, 32, 33.
 War and Warfare of the Ancient Mexicans, 95.
 Ward, Mrs. J. C., 739.
 Ware, C. E., 488.
 " J. A., 488.
 Washburn, L. K., 732.
 Washington, Smithsonian Institution, 14, 21, 196, 211, 216, 219, 495, 737, 742, 747.
 Water-jar, basket lined with gum, Pah Ute, 213.
 Weapons, Africa, 211.
 " ancient Mexicans, 105.
 " and implements, South Sea Islands, 211.
 " Australia, 211.
 " China, 211.
 " Gulaia, 211.
 " Hindostan, 211.
 " Pacific Islands, 18.
 " Pah Ute Indians, 213.
 " Sandwich Islands, 19.
- Weights to Digging-sticks, manufacture of, by former Indians of Southern California, 285.
 Welch, W. L., 743.
 Weld, J. C., 483.
 Wells, J. H., Egyptian collection, 723, 740.
 West, Dr., 735.
 Western Islands, Water-jar, 211.
 West Indies, baskets, 735.
 " objects, arranged, 729.
 " stone implements, 735.
 West Virginia, cast of grooved axe, 215.
 " pottery, 488.
 Wheatland, H., Sec'y of the Board of Trustees, abstract of Records, 5, 176, 465, 714.
 Wheeler, G. M., 216, 747.
 White, J. H., 739.
 Whitfield, B. H., 14.
 Whistles, Nicaragua, 492, 740.
 " Santa Catalina Isl., Cal., 496.
 Whitney, Mrs., 485.
 Whittlesey, C., 24, 218, 493.
 Williams, Mr., 735.
 Wilson, T., builder of cases in new building, 480, 730.
 Wiltshire, Archaeological and Natural History Society, 23.
 Winchell, N. H., 748.
 Winthrop, R. C., 20, 217, 487, 488, 492, 744.
 " " Chairman of Trustees, Remarks at first meeting of Board in New Building, 177.
 " " notice of Jeffries Wyman, 180.
 " " objects from Egypt, 723.
 Wisconsin, cranium, mound, 208, 221.
 " human bones, 491.
 " mounds, 728.
 " pottery, 491.
 " stone implements, 491.
 Wood, A., 215.
 Wood, Turner's Mound, Ky., 15.
 Wooden carvings, Egypt, 490.
 " implements, cave, Utah, 213.
 " " grave, Peru, 211.
 " mortar, Indians of the Amazon, pillow, Africa, 211. [491.
 " spoon, Persia, 741.
 " stool, cave, Nicaragua, 740.
 " structure, remains of on mound, Virginia, 75.
 Woollen threads on frame, Peru, fig., 287.
 Woolley, C. F., 484, 739. [491.
 Woorara poison, Indians of the Amazon, Worcester, American Antiquarian Society, 494, 751.
 Wright, S. H., 50.
 Wyman Collection, Florida shellheaps, 194, 214.
 " J., 9, 180, 214, 217, 742.
 " " first Curator of the Museum, notice of, 180.
 " " " " the Museum, portrait of, 9.
 Wyoming Territory, stone implements, 18.
- Yagona, bowl, Fiji, 741.
 Yankton Sioux cranium, 210.
 Yarrow, H. C., 20, 736. [490.
 Yo Semite Indians, basket for worm bait

